

GREENING CHANDIGARH ACTION PLAN 2020-21





FOREST.

A HEAVEN IN THE LAP OF NATURE.



RAJ BHAWAN
CHANDIGARH

MESSAGE

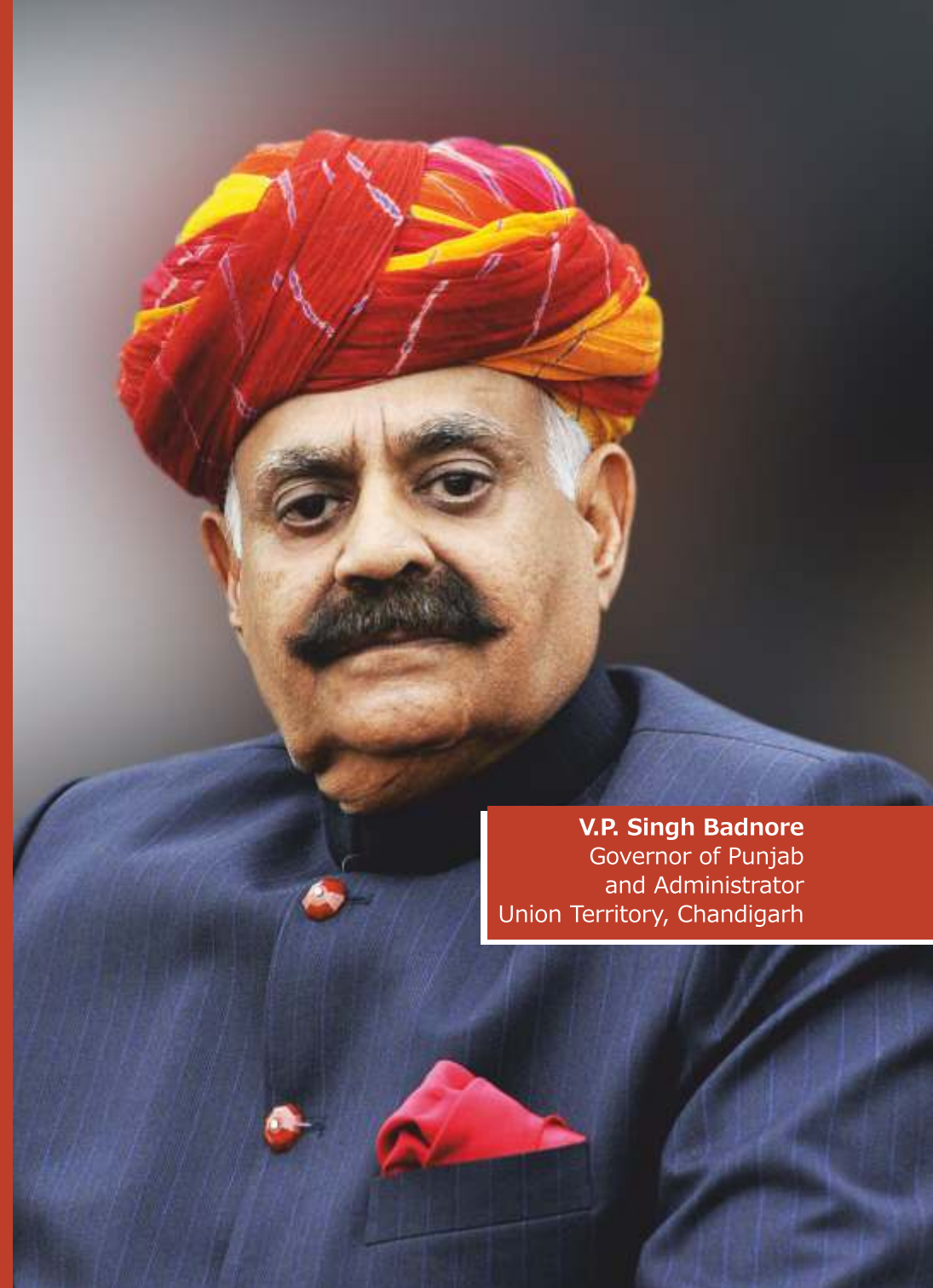
Trees are the 'Green Lungs' of Mother Earth. We depend on forests for our survival, from the air we breathe to the wood we use. Besides providing habitats for animals and livelihoods for humans, forests also offer watershed protection, prevent soil erosion and mitigate climate change.

We all need healthy forests. They help keep our climate stable, absorbing carbon dioxide and releasing oxygen, and they regulate our water supply and improve its quality. They also provide a home to more than half of all species found on land – a rich variety of life that keeps so many natural systems running.

I am happy that like previous years, Forest Department, Chandigarh Administration has formulated the Greening Chandigarh Action Plan 2020-21, which includes specific plantation targets and strategies for successful implementation of the green plan to further improve the greenery in our city. A significant part of our city is under green cover and I appreciate the persistent endeavour of the residents of Chandigarh, NGOs, Schools & Greening Chandigarh Task Group for contributing towards greening of the city beautiful.

I extend my best wishes and heartiest congratulations to all the participants of the 'Greening Chandigarh Campaign' and wish them success in their endeavour.


(V.P. Singh Badnore)



V.P. Singh Badnore
Governor of Punjab
and Administrator
Union Territory, Chandigarh



MESSAGE

Trees are mankind's lifeline and act as purifiers of air and receptacles of our waste products. Trees have great economic value too. We get fuel, fodder, timber, medicines and numerous other valuable products from the trees. That is why, it is not surprising that these trees were given great importance in our culture, our tradition and our mythology. The survival of entire mankind and other life forms depends upon the health and well being of our trees and specially our forests.

The preparation of the Greening Chandigarh Action Plan is an attempt to combine the interests and concerns of all sections of urban community into an overall planned, integrated and a systematic strategy for better management of Urban Forestry to make the 'City Beautiful' even more beautiful. I appreciate the endeavour of all the Greening Agencies, Non-Government Organizations and Community Groups in successfully achieving the targets fixed during previous years and as a result, Chandigarh has recorded a substantial jump in tree cover in last two years.

I am happy to note that 'Greening Chandigarh Task Group' has formulated the 'Greening Chandigarh Action Plan' for the year 2020-21. I am sure that this year also, the planned and strategic targets fixed in the action plan will significantly contribute to the greenery of the city beautiful.

I extend my best wishes to all greening agencies for their laudable efforts.


(Manoj Parida)

Manoj Parida, IAS

Advisor to the Administrator
Union Territory, Chandigarh



Arun Kumar Gupta, IAS
Home Secretary-cum-
Principal Secretary (Forests & Wildlife)
Union Territory, Chandigarh

MESSAGE

Forests are one of the most important natural resources. The forests not only produce innumerable material goods but also provide several environmental services which are essential for life.

In 2019, the India State of Forest Report (ISFR) published by the Forest Survey of India (FSI) has reported a substantial 15 km² increase in the Tree Cover of Chandigarh. This significant increase in greenery is due to successful incorporation of forestry in overall Urban Planning and focused implementation of 'Greening Chandigarh Action Plan' by all the Greening Agencies, Community Groups and residents of Chandigarh.

I congratulate the 'Greening Chandigarh Task Group' led by Forest Department, Chandigarh for bringing out a comprehensive Greening Action Plan for 2020-21 highlighting the plantation targets and strategy to further improve the green cover of Chandigarh.

(Arun Kumar Gupta)



MESSAGE

Forests are essential to life on earth. They are home to many species, from large mammals to many micro-organisms. The goods and services provided by forests are beneficial to humans in many ways such as economically, health-wise, emotionally or socially. After Oceans, Forests are the world's largest storehouse of carbon – thus known as carbon-sinks. They contribute in climate change mitigation, absorbing carbon dioxide from atmosphere and store them in wood, leaves and soil and produce oxygen for people to breathe. They have an important role in Global Water Cycle, as well.

Realizing these facts, greening has been made the integral part of Urban Planning in UT Chandigarh. The City with 46% of forest and tree cover, two Wildlife Sanctuaries, green belt on the periphery as well as criss-crossing the length and breadth of the city speaks volumes of visionary approach of the planners and active implementation and execution of the plan by various stakeholders.

I am happy to note that 'Greening Chandigarh Task Group', like previous years, has come out with the "Greening Chandigarh Action Plan 2020-21". I am sure that planned & strategic target fixed in the Greening Drive will significantly contribute to the greenery of the City Beautiful, making it more green and beautiful.

The efforts made by all Greening Agencies, NGOs, Educational Institutions, RWAs and especially the green loving citizens of Chandigarh in the successful implementation of 'Greening Chandigarh Action Plan 2019-20' are commendable.

I extend my best wishes to all Greening Agencies and the stakeholders for successful implementation of 'Greening Chandigarh Action Plan 2020-21' to achieve the desired output and conserve these invaluable natural resources for posterity.

(Debendra Dalai)

Debendra Dalai, IFS

Chief Conservator of Forests &
Chief Wildlife Warden,
Union Territory, Chandigarh



MESSAGE

Forests are a great blessing of nature. Beautiful avenue trees, well stocked forests, lively gardens & parks and aesthetic Green Belts are typical landscape elements of Chandigarh. The forests are very important for the sustenance of wildlife and they play an important role in food chain. Owing to the numerous benefits and the products of the forests, it can easily be stated that forests are one of the invaluable gifts of nature to the mankind. They are an indispensable part of our earth's ecological system.

I congratulate the 'Greening Chandigarh Task Group Team' for bringing out a comprehensive Greening Chandigarh Action Plan 2020-21 highlighting the plantation targets and strategy to further improve the Green Cover of Chandigarh. I am sure that this year also the planned and strategic targets fixed in the greening action plan will significantly contribute to the greenery of the City Beautiful. I congratulate all stakeholders for effective implementation of Greening Chandigarh Action Plan 2019-20 which led to Green Cover of over 46% in Chandigarh at present.

I convey my best wishes to the local residents, Greening Chandigarh Task Group and all other stakeholders for successful implementation of 'Greening Chandigarh Action Plan 2020-21'.

T.C. Nautiyal, IFS
Conservator of Forests
Union Territory, Chandigarh

(T.C. Nautiyal)



Acknowledgement

Greening is an integral part of urban planning in UT Chandigarh. The 'Greening Chandigarh Task Group' constituted by Chandigarh Administration formulates Greening Chandigarh Action Plan (GCAP) to chalk out planning of plantation works comprehensively, its implementation, monitoring and to look into all aspects of Silvicultural & Horticultural operations. Due to sustained & sincere efforts of all the greening agencies & other stakeholders, the greenery of City Beautiful has increased significantly and it is persistently increasing.

Encouraged by the positive results, the Greening Chandigarh Task Group has prepared "Greening Chandigarh Action Plan 2020-21". The plan comprises of plantation targets of greening departments/agencies and the strategies to achieve the desired results. During the year 2020-21, total 2,55,000 number of saplings will be planted in a phase wise manner on the Government & Private land. Apart from other valuable information which Action Plan summarizes, a list of trees/shrubs has been recommended that are suitable for plantation under various conditions. On every page of the booklet, the slogan related to protection and conservation of environment and forests have been mentioned. This information will be useful in sensitizing the masses and in raising awareness for the protection & conservation of nature & natural resources in general and trees in particular.

I am extremely indebted to Shri V.P. Singh Badnore, Hon'ble Governor of Punjab & the Administrator, UT Chandigarh for his consistent guidance & encouragement for preparing this comprehensive Action Plan. His concern for the people and environment of Chandigarh has been a constant source of inspiration to all of us. I am indebted to Sh. Manoj Parida, IAS, Adviser to the Administrator for his

Dr. Abdul Qayum, IFS

Deputy Conservator of Forests-cum-
Member Secretary
Greening Chandigarh Task Group
Union Territory, Chandigarh

valuable suggestions, input & guidance for preparation of this Action Plan. I express my heartiest gratitude to Sh. Arun Kumar Gupta, IAS, Principal Secretary (Forests & Wildlife), Chandigarh Administration for the immense support and guidance in materializing this crucial plan.

I am highly grateful to Sh. Debendra Dalai, IFS, Chief Conservator of Forests & Chief Wildlife Warden, Department of Forests & Wildlife for his valuable inputs, guidance & support in the formulation of the current Action Plan. I am also grateful to Sh. T.C. Nautiyal, IFS, Conservator of Forests for his continuous guidance and feedbacks during the preparation process of Action Plan.

I am also thankful to the Executive Engineer (Horticulture), Engineering Department and Executive Engineer (Horticulture), Municipal Corporation, Chandigarh especially for providing valuable information for the preparation this valuable document. I extend my sincere gratitude to Dr. Navtej Singh, District Extension Specialist, PAU Extension Cell, Chandigarh for his valuable inputs & support in formulation of this significant Action Plan.

I am also thankful my team members, Sh. Bhupinder Singh, RFO, Nepli Range and Sh. Jatinder Singh, RFO, Chandigarh Range and especially Sh. Rohit Kumar Saini, Forester for incredible photographs and numerous data on the subject. I am also thankful to Sh. Jatinder Verma and Sh. Ajay Kumar Gupta, Stenographer & all Officers and Staff of Forest Department for their efforts to get this Action Plan prepared. The heartfelt thanks are for my supporting staff Sh. Navdeep Bisht and Sh. Naveen Balhara for their tireless efforts in arranging and coordinating with different resource groups. I shall also remain indebted to Sh. Kulbhushan Kanwar & Sh. Narbir Kahlon for the valuable inputs and to Sh. Pramod Sharma of Yuvsatta (NGO) & Sh. Sachin Sharma of Youth Innovative Society (NGO) for being a partner in numerous forest activities of the department.

With valuable suggestions from all, I am sure that this Greening Chandigarh Action Plan would prove to be a great document and another milestone in taking Chandigarh's greenery to the next level and it will help people of Chandigarh in gifting a more green, clean, pollution free and healthy city.



(A. Qayum)



Chapter-1 | Page 01
Introduction



Chapter-2 | Page 08
Review of Greening Chandigarh
Action Plan 2019-20



Chapter-3 | Page 42
Vanmahotsava & Paudh Mela



Chapter-4 | Page 52
Tree Felling Rules
in Chandigarh



Chapter-5 | Page 58
Greening Chandigarh
Action Plan 2020-21



Chapter-6 | Page 68
Strategy to Improve the
Forest & Green Cover



Chapter-7 | Page 70
Strategies for Implementing
the Greening Chandigarh
Action Plan 2020-21



Chapter-8 | Page 84
Useful Tips for Public



Chapter 1

INTRODUCTION

Chandigarh, the first planned city of independent India, was planned by the famous French Architect Le Corbusier. Picturesquely located at the foothills of Shivaliks, it is known as one of the best experiments in urban planning and modern architecture in the twentieth century in India. Chandigarh derives its name from the temple of "Chandi Mandir" located in the vicinity of the site selected for the city. The deity 'Chandi', the goddess of power and a fort of 'garh' laying beyond the temple gave the city its name "Chandigarh – The City Beautiful".

The basic geographical and demographic profile of Chandigarh is as under :-

Area	140 sq.kms. (Includes 26 sq.kms. of Sukhna Wildlife Sanctuary)
Longitude	76° 47' 14E
Latitude	30° 44' 14N
Latitude	304-365 meters above MSL with 1% drainage gradient
Annual Rainfall (2016)	910 mm
Monsoon	July-September
Temperature	Winter Min. (Nov.-Jan, 2016) 2°C - 10° C Summer Max. (April-July, 2004) 38°C - 43°C
Prevalent Winds	From the North West to South East in Winter and reverse in Summer
Total Population (2011 census)	10,55,450
Density of population/sq.km.	9,258
Birth Rate	11.7 (2018)
Death Rate	5.27 (2018)
Infant Mortality Rate (per 1000)	25.6 (2018)
Sex Ratio (females per 1000 males)	808
Decennial Population Growth	17.19%
Literacy Rate	86.0%

Chandigarh has cold dry winter, sweltering summer, and subtropical storm. Vanishing ordinarily surpasses precipitation and the climate is commonly dry. The territory encounters four seasons : (i) Summer or sweltering season (mid-March to Mid-June) (ii) Rainy season (late-June to mid-September); (iii) Post storm fall/progress season (mid-September to mid-November); (iv) Winter (mid-November to mid-March).

Greening is an integral part of Urban Planning in Chandigarh. A number of beautiful avenues with conspicuous tree species, well wooded forests at the periphery, 'Sukhna Lake' against the backdrop of Lake Reserve Forests, green belts running across all over and a beautiful 'Sukhna Wildlife Sanctuary' enhance the ecological, environmental and aesthetic richness of the city.

Chandigarh has good floral as well as faunal diversity including home to more than 200 species of avifauna. The faunal diversity in the natural marshes include mammals like Sambar Deer, Wild Boar, Indian Grey Mongoose and common birds like Parakeet, Bee-eater, Indian Robin, Indian Flying Fox, Peafowl, Indian Grey Hornbill, Red Jungle Fowl etc.

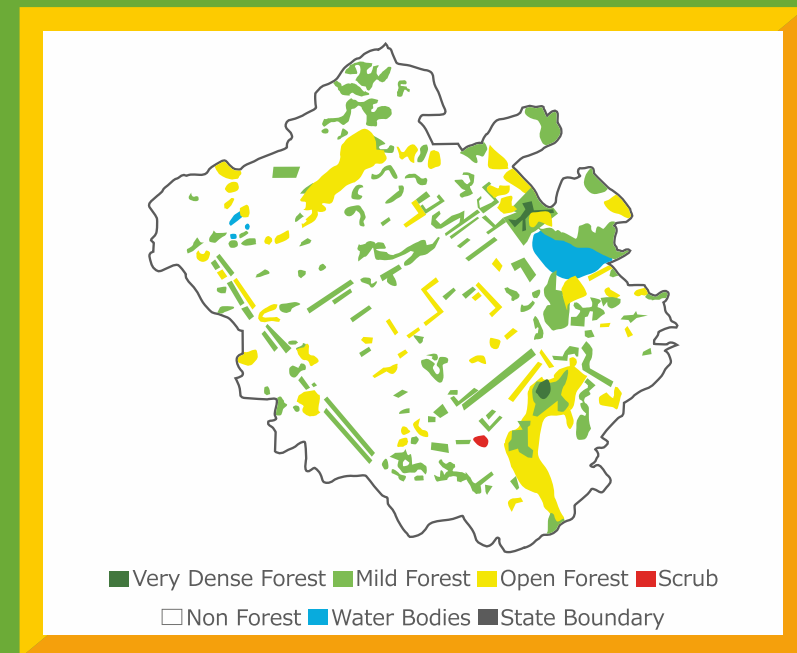
Shisham, Khair, Babul, Karanj, Ber, Neem etc. are the important tree species of the region.

GREEN CHANDIGARH ACTION PLAN



Chandigarh, the city beautiful is recognized all over the country for its greenery and various green initiatives taken by the Administration. In order to execute and implement the green initiatives as envisioned during the planning process of the city, the Greening Chandigarh Task Group was constituted by the U.T. Administration and the first Greening Chandigarh Action Plan came into being in 2001. It was the guiding tool for all the greening agencies to carry forward the legacy and maintain the greenery of the city to mitigate various challenges, the environment is facing due to various anthropogenic activities. The 20th edition of GCAP 2020-21 spells out clearly the targets and strategies to achieve them. Constantly increasing human population and number of vehicles plying on the streets have put additional pressure on the resources available and thus has posed challenge before the greening agencies.

FOREST COVER MAP OF CHANDIGARH



CHANDIGARH IS MORE BEAUTIFUL THAN YOU THINK !

Chandigarh, the city beautiful has:

- Two Wildlife Sanctuaries (Sukhna Wildlife Sanctuary & City Bird Sanctuary in Sector-21)
- Nagar Van (City Forest) within the city
- Peacock Park at Sector 39
- More than 1800 green parks
- Avenue plantation along all the roads
- Network of about 193 KM of cycle track
- 75% of city's energy requirements are met through renewable sources and declared as Model Solar City and has already installed 35 MWp of roof top Solar Power Plant (SPV)
- Rooftop SPV is compulsory on all properties measuring 500 sq yards and above
- Designated wetland called 'Sukhna' - An ideal habitat for Migratory Birds
- 100% treatment of sewage water and its usage for gardening purpose
- India's Cleanest State Capital 'Swachh Sarvekshan Award 2017' & Cleanest Capital City 'Swachh Sarvekshan Award 2019'
- Single use plastic banned
- All conventional energy street light system replaced with LED
- Diesel Autos and Kerosene Free City



- Forests of Chandigarh have been assigned the Rank 1 on Planning Commission's Environmental performance index
- The forest cover in Chandigarh is 48.03 sq km and another 25 sq km area is under tree cover
- The forest cover in the UT has increased by 0.47 sq km in 2019 as compared to the 2017 (Source- ISFR 2019)
- The green cover of Chandigarh has increased by 71.96 sq km including Sukhna Wildlife Sanctuary from 57.55 sq km to 64.75 sq km at present.

FOREST & GREEN COVER OF CHANDIGARH

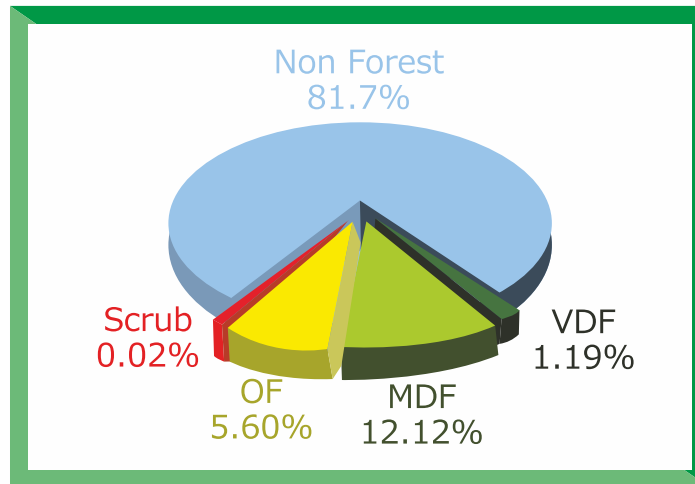
Geographical area of Chandigarh is 114 sq km. Another 25.98 sq km of hilly area, which was earlier acquired for soil conservation works, has been declared as 'Sukhna Wildlife Sanctuary' on 06 March, 1998.

The India State of Forests Report (ISFR), 2019 shows that the Green Cover of Chandigarh has been enhanced from 41% in 2017 to 46% in 2019. As per the Report released by the Ministry of Environment, Forest & Climate Change, Govt of India, there is a substantial jump in the Tree Cover of Chandigarh from 10 to 25 sq km. Further, due to intensive plantation, maintenance and proper management, there is an increase of 0.42 sq km in the Medium Dense Forest which increased from 13.82 sq km to 14.02 sq km. The Open Forest area has also increased by 05 hectare which signifies that more Non-Forest Area has been brought under Green Cover.

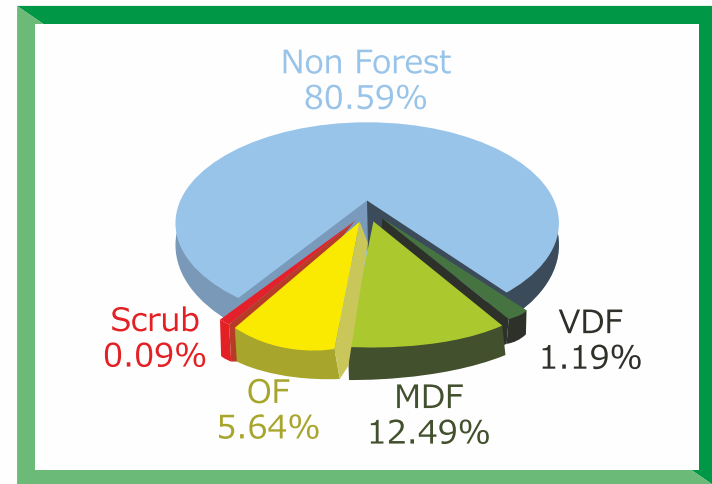
Thus, a net 55 hectare of Non-Forest Area has been brought under the Forest Cover.



Forest Cover of Chandigarh in ISFR 2017



Forest Cover of Chandigarh in ISFR 2019

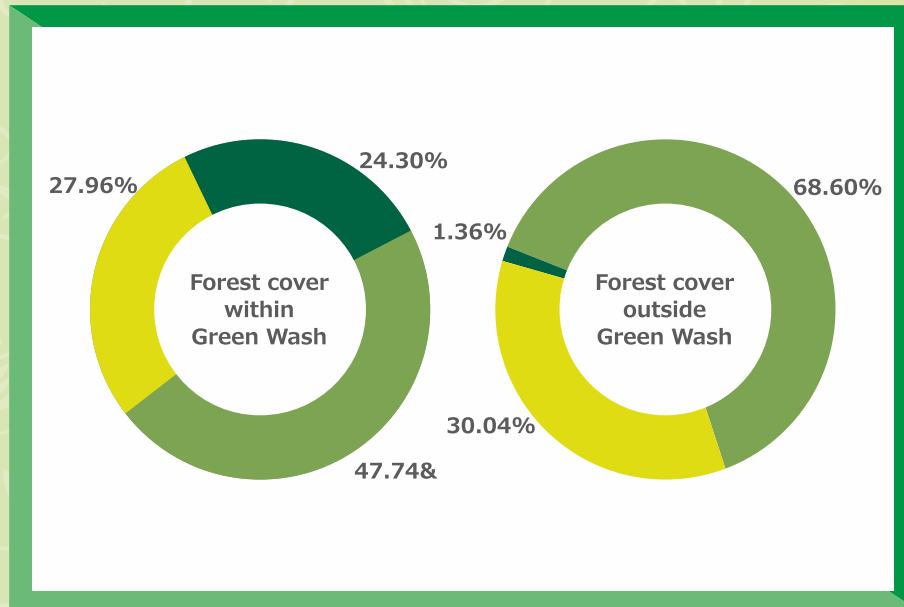


TREE COVER OF CHANDIGARH

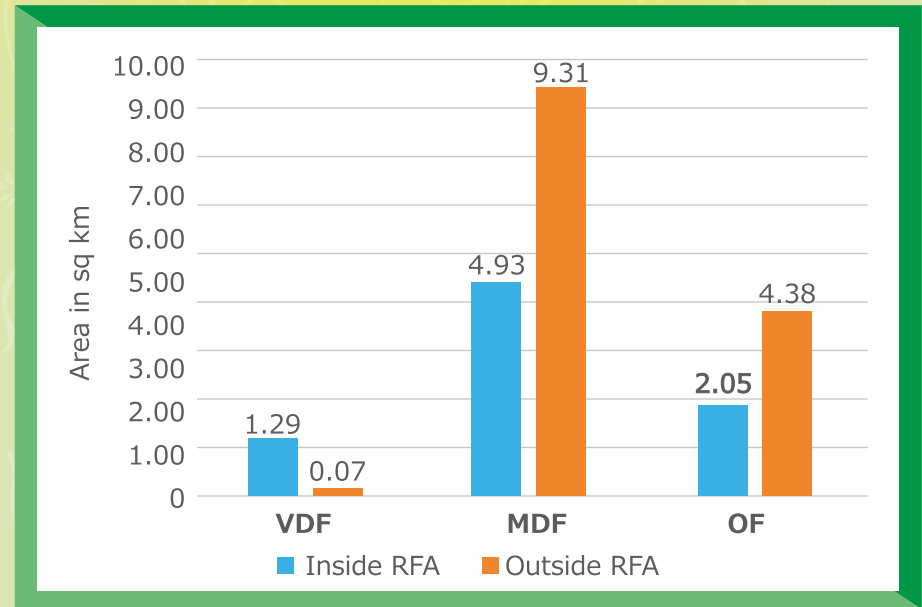
Forest cover presented accounts for tree patches of size 1 ha and more having canopy density of more than 10%. However, trees occurring in patches of size less than 1 ha including scattered trees are assessed through sampling based methodology. Tree cover in Chandigarh has been estimated as under:-

TREE COVER	Area (in sq KM)
	25

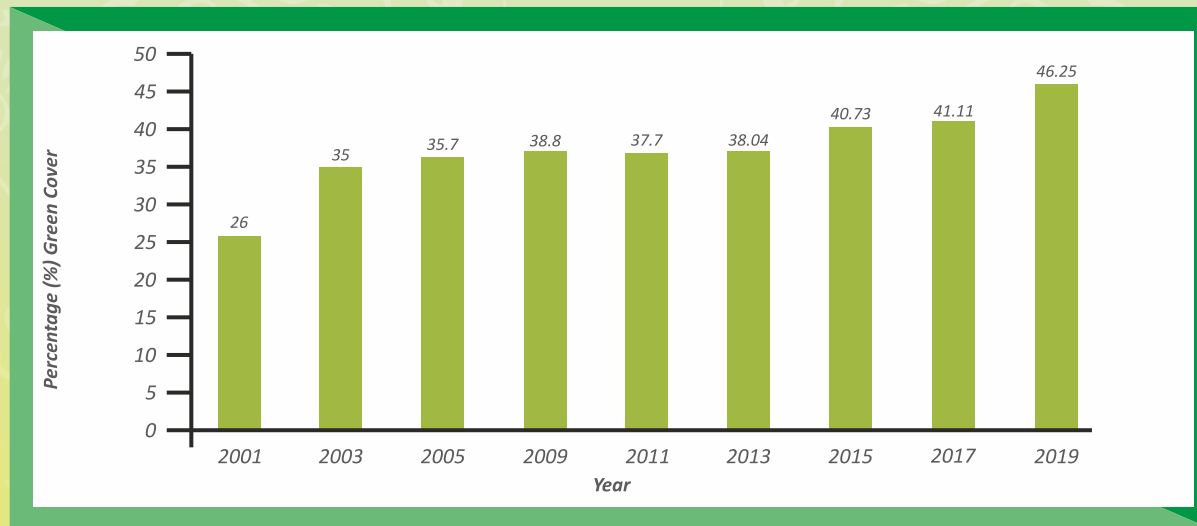
Forest Cover within and outside green wash area in ISFR 2017



Forest Cover inside and outside RFA in Chandigarh, ISFR 2019



Percentage of Green Cover in UT Chandigarh (Including Sukhna Wildlife Sanctuary)



Men argue. Nature acts.



ECO SYSTEM SERVICES OF FORESTS

Rising pollution level of the city, particularly by vehicular pollution, highlights the need for remedial steps to combat pollution. The effective way to reduce air and noise pollution is through a well planned and realistic Afforestation Strategy.

Trees bring benefits to communities, wildlife & environment. In cities, Well-designed green belts prove to be effective wind break and help in soothing the micro-climate of the surroundings viz

1. Improve air quality and counteract greenhouse effects by absorbing pollutants and intercepting harmful particles
2. Provide aesthetic beauty
3. Support environmental education
4. Enrich habitats & biodiversity
5. Reduce noise pollution
6. Help in soil & moisture conservation
7. Enhance health & well being
8. Mitigate heat island effect



Chapter 2 REVIEW OF GREENING CHANDIGARH ACTION PLAN 2019-20

TARGET ACHIEVEMENTS

Department of Forests & Wildlife, UT of Chandigarh is committed and working tirelessly towards greener and cleaner Chandigarh. The hard work supplemented by sustained campaign and much needed technical inputs and active support and participation of the citizens have yielded commendable results.

During the year 2019-20, the Greening Agencies have made all out efforts to achieve their plantation targets i.e. 2,52,000 (Saplings), 1,50,000 no. of stem cutting of *Arundo-donax* (a soil binder plant) and 3,00,000 no. of Patch-sowing.

It will be very appropriate to mention that the institutions namely Forest Department, Municipal Corporation, Engineering Department, Panjab University, NGOs, RWAs, Educational Institutions & farmers and above all, the strong will and farsightedness of the administration contributed a lot towards the success of this programme. The contribution, dedication and genuine concern of the green citizens of the 'City Beautiful' to make the city greener, needs special mention. Encouraged by the previous year's results, the Forest Department, Chandigarh in collaboration with Municipal Corporation and Engineering Department, Chandigarh had chalked out a programme to continue the efforts with the renewed zeal and energy during the year 2019-20. The achievement is 102% as detailed on the next page.

PLANTATIONS' ACHIEVEMENTS DURING 2019-20

S.NO.	Department/ Organization	No. of saplings planted		No. of stem cuttings of Arundo-donax plants		No. of patch-sowing (seed sowing)		
		Target	Achievement	Target	Achievement	Target	Achievement	
1-A.	Forest Department		65,000	67,500	1,50,000	1,50,000	300000	300000
1-B.	Municipal Corporation		40,000	44,000				
1-C.	Horticulture Division, Engineering Department		22,000	45,060				
2-A.	Free distribution of saplings by Forest Department to Educational Institutions, Religious Institutions, NGO's etc	1,25,000	60,000	68,850				
2-B.	Selling of saplings by Horticulture Wing of Municipal Corporation		25,000	11,000				
2-C.	Selling of saplings by Engg. Department		40,000	19,901				
Total			2,50,000	2,56,311	1,50,000	1,50,000	300000	300000





CHALLENGES FACED & STEPS TAKEN FOR PROTECTION & CONSERVATION OF FLORA

Greening is a continuous and sustained activity of Chandigarh since beginning. Many green avenues were created at the time of establishment of the city in 60's and 70's. So, some of the trees have died along the roadside and in parks, whereas a few are infested with termites and are in the process of dying. Not only they give an ugly look but also these trees are prone to uprooting and breaking during storms and attack/ spread of diseases etc. All such dead trees will be replaced with ornamental and pollution mitigating species without altering the species as per the original plan. Irregular cutting of tree branches should be avoided as it increases the possibility of insect infestation and infections. Pruning is required to be carried out under the direct supervision of concerned Horticultural staff and the mechanized instruments to avoid irregular cuts.

MAINTENANCE OF AESTHETIC BEAUTY OF THE TREES

Maintenance of Aesthetic Beauty of the trees is of utmost importance. Irregular cutting of tree branches in one direction destroys the shape of the tree canopy and presents an ugly look. Further pruning on one side makes the tree asymmetrical & it starts leaning & ultimately poses serious threat of getting uprooted. Thus, scientific pruning of branches are to be given top priority.

Reduce, Reuse, Recycle.



PLANTING FOR FUTURE REPLACEMENT

It is essential to create either a second row of trees or under-planting under the over matured trees especially Eucalyptus, well in advance to avoid treeless situation at the time when these over-matured trees are removed or uprooted naturally. Many avenue plantation of Eucalyptus raised earlier have crossed Silviculture rotation period, posing danger to life and property. Gradual replacement of these avenues in a phased manner is very essential. For this purpose, a replacement policy governed by the following principles will be adopted:

Identification of trees which are likely to be replaced in the next ten years.

Replacement planting under these identified trees should be scheduled in such a manner that at the time of removal of old tree, new crop of trees is at least 10 years old or crown of tree is developed enough to provide shade and matured enough to withstand various climatic and biotic pressures.

Replacement should be carried out with the superior stock of already planted species along Avenues.

Mixture of more than two species should be avoided in case of roadside avenue plantations. While doing replacement planting, tall saplings of 6 feet and above should be used so as to reduce establishment period and maintenance cost.

At the time of replacement planting, it should be ensured that saplings of same age group and same height are planted to provide an even look. Further, sufficient protection measures should be taken to avoid casualties, which normally results into gaps or uneven look to the avenue.

SELECTION OF SPECIES TO BE PLANTED UNDER THE OVERHEAD ELECTRIC & TELEPHONE LINES

It is observed that the trees like *Pilkhan*, *Chukrasia* and *Bahera* which grow up to 40 feet height have been planted under electric lines which are hardly 15 feet above ground level. These trees then require constant headback and heavy pruning and thereby giving non-aesthetic view to the road sides. The species like *Putranjiva roxburghii*, *Mimusops elengi*, *Cassia javanica*, *Cassia nodosa* and medicinal herbal shrubs etc. may be planted under the electric lines running parallel to roads or in parks and green belts. These species can be given beautiful shapes by light pruning only.

REMOVAL OF LANTANA, PARTHENIUM GRASS ETC.

Besides being allergic, Lantana and Parthenium are obnoxious weeds that adversely affect the growth of indigenous species. They have an adverse impact on the biodiversity including palatable grass for wild animals as it kills all kinds of undergrowth. Amarbel, which is a parasite has also invaded a few trees in Chandigarh. It is a parasite which covers the whole foliage of tree and starves it of light and air. All greening agencies have been asked to remove these weeds at least twice a year to ensure proper growth of indigenous flora. Instructions have been given to Horticulture Wings of both Municipal Corporation and Engineering Departments to keep their respective areas clear of this weed.

COMPOSTING/ VERMI-COMPOSTING TO STOP BURNING OF LEAVES

Burning of dry leaves and other waste material on road sides and under the trees not only causes air pollution but also damages the tree. All greening agencies and local bodies should ensure that no such malpractice should take place. Rather, these leaves may be utilized to make compost/ vermi-compost manure by mixing cow dung with them into big pits.

The Departments may further utilize this manure for their nurseries and plantations.

Municipal Corporation may make efforts to introduce composting in nurseries and various other sites. Specific allocation of these composting sites may be done by the Departments/ Municipal Corporation on roadsides for collection and dumping of dry leaves in those pits. All institutions and households are requested to make compost/ vermi-compost pit at their premises to convert dry leaves into compost or vermi-compost which may be very useful for their kitchen garden. Municipal Corporation and Engineering Department will take strict action against officials/ individuals responsible for burning of leaves.



CONTROL OF PEST ATTACK ON TREES

Sustained & concerted efforts of various agencies under the guidance of PAU Advisory Service have been successful in combating the epidemic status of Mango mealy bug, thus preventing a serious threat to a wide range of flora. Similarly, efforts are on to prevent stem borer attack on *Arjun* trees on 'Dakshin Marg'.

Municipal Corporation and Engineering Department are expected to complete the process of wrapping alkathene around tree trunks by 15th of December every year as this is the time for mealy bug nymphs to crawl up the trees.

REGARDING TREES INFESTED WITH TERMITES, FOLLOWING TREATMENT METHOD SUGGESTED BY THE SCIENTISTS OF FRI SHOULD BE FOLLOWED:

In the areas of high termite activity, where the damage is very extensive and is likely to affect the growth, chemical treatment may be carried out as under:



Soil treatment: One liter of insecticidal solution of 0.2% Chlorpyriphos 20 EC may be applied by digging a trench encircling the base of the tree.



Bark treatment: To prevent the termite attack on the bark or the outer portion of the tree trunk, brush painting with the insecticide may be done after scrapping off the earthen plaster or galleries.

Formula for preparation of the insecticidal solution:

$$\text{Actual insecticide required} = \frac{\text{Solution required} \times \% \text{ (Percentage)}}{\text{Formulation}}$$

Ready Reckoner for making up to 100 liters of diluted spray of desired strength:

% of actual dose required	Chlorpyriphos 20EC	Chlorpyriphos 50EC
0.01	50 ml	20 ml
0.02	100 ml	40 ml
0.05	250 ml	100 ml
0.1	500 ml	200 ml
0.2	1000 ml	400ml

Note: For example, in order to make 0.2% solution of Chlorpyriphos 20 EC, mix one liter of the insecticide in 100 liters.

The quantity required varies with the size of the mound. The following height dosage relationship for effective control of mound building termites has been given by Roonwal, 1985.

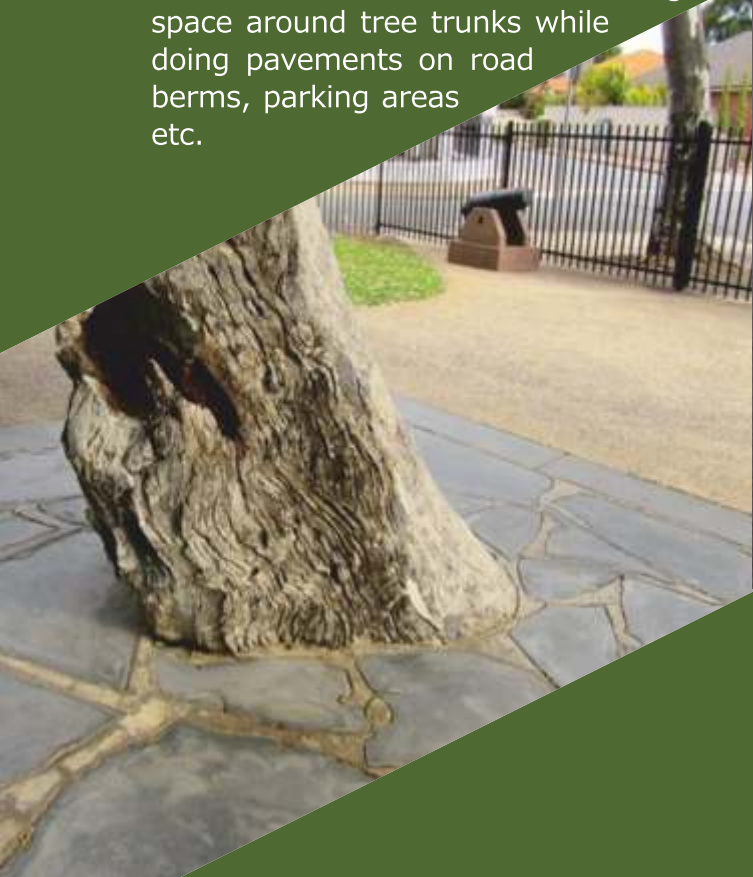
Mound height	Dosage of insecticide solution
90 centimeter	4.5 liters
1.20 meter	23 liters
1.50 meter	45 liters
1.80 meter	82 liters
2.10 meter	123 liters

It takes about a week for the complete killing of the entire mound colony. Make 2 or 3 large holes in the mound and pour in the liquid by means of a bucket and a large mouthed funnel.

Another most effective method is by poisoning the mounds with Aluminum Phosphoric tablets. Two tablets should be placed in 1 meter mound and close all the openings with wet mud. The termites will die due to fumigant action (Mound poisoning).

REMOVAL OF CONCRETE/TILES AROUND THE TREE TRUNK

Compaction of soil, concreting and tiling around tree trunk adversely affects its growth and life. It also reduces/ stops percolation of rain water into the sub soil and stops proper soil aeration of roots of the trees. This leads to tremendous damage to the trees. All greening agencies should leave a space of 6 x 6 ft. around the tree trunk to ensure proper growth and long life in addition to recharging of underground water aquifer. It has been decided to leave sufficient breathing space around tree trunks while doing pavements on road berms, parking areas etc.



RECHARGING OF GROUND WATER AQUIFERS

It has been observed that the water table is going down in Chandigarh. This is primarily due to reduction in percolation of rain water. Rain water is lost due to surface run off as most of area is tiled or concreted in the form of parking



pavements, road berms etc. To recharge underground water aquifers, it is essential to reduce/ minimize surface run off. To achieve this, perforated tiles should be used in parking areas & road berms wherever possible. Carpeting of exposed soil with Paspalum lawn grass may be preferred over pavers wherever possible.



MULCHING OF LEAVES FOR PROTECTION OF SAPPLINGS

Mulching leaves is a great way to dispose of them and protection of saplings. It can reduce a pile of leaves to about one-tenth of its volume. Nitrogen rich grass clippings can also be mixed with carbon rich leaf particles. These dry & wet straw grasses and leaves should be used for mulching over the soil around tree/ sapling stem to protect the roots & conservation of moisture.

VARIOUS GREEN ACTIVITIES DURING THE YEAR



ECO CLUB



WORLD EARTH DAY- 2019

World Earth day was celebrated at the City Forest with young shutterbugs representing eight prominent schools of the city, clicking pictures of birds, butterflies and animals in this part of Sukhna Wildlife Sanctuary for an Inter-School Photography Contest. An array of colourful birds was captured through lens of young ones that included grey hornbill, peacocks, parakeets and jungle fowl etc.

The event was followed by an Inter-School Declamation and Photography Contest on the theme of 'Protect our Species', in which students from 25 Schools of the city participated.

Prominent dignitaries who graced the occasion included Dr. OP Mishra, IPS, DIG, Chandigarh Police, Sh. Debendra Dalai, IFS, Director, Department of Environment & Chief Conservator of Forests, Chandigarh Administration and Dr. Abdul Qayum, IFS, Dy. Conservator of Forests, Chandigarh Administration.



WATER CONSERVATION FORTNIGHT

Water conservation is the practice of using water efficiently to reduce unnecessary water usage. Department of Environment, Union Territory of Chandigarh organized a 'Water Conservation Fortnight' in various schools of the city, with the target to reach approximately 20,000 school students and sensitizing them on vital source of life i.e. Water Conservation & its judicious management.



“ An ounce of practice is worth more than tons of preaching. ”

-Mahatma Gandhi





**Inaugural function at
St. Joseph's Sr. Sec. School
Sector 44D, Chandigarh**

A colorful dance showcasing plight of birds and a street play on 'Say No to Water Wastage' was presented by the students on this occasion. A green quiz was also conducted. School students also took a pledge to conserve water.

Giving information about the initiative, Sh. Debendra Dalai, Director, Department of Environment informed that with the onset of summers, the demand for water goes up and it becomes imperative not to waste water and propagate its judicious use. He motivated young students to conduct 'water audit' at their homes by calculating total consumption of water used for various daily chores at home and come out with ideas to reduce this consumption by at least 20-25%. Quoting Mahatma Gandhi he shared that "An ounce of practice is worth more than tons of preaching."



Green Quiz Competition at St. Joseph's Sr. Sec. School, Sector 44D, Chandigarh

CII CHANDIGARH FAIR, 2019

The Department of Forest & Wildlife, Chandigarh Administration participated in 24th edition of CII Chandigarh Fair in October, 2019. The fair was inaugurated by Shri V. P. Singh Badnore, Governor, Punjab and Administrator, UT, Chandigarh.

On the occasion, the stall set up by the department grabbed a lot of attention of the visitors. A cage was built around and school students were dressed up as animals for message of 'love for animals'. The idea was to showcase the relationship between man and animals.

Audio-visual exhibits of animals were installed and visitors could use headphones to hear their calls – that of a wild boar, sambar, cheetah, cobra and many more. The forest department had also set up a 'selfie point' wherein hundreds of visitors clicked their photos.



Forests are the lungs of our land.



CMS COP 13 - CONVENTION ON 'MIGRATORY SPECIES' AT GANDHINAGAR

CMS COP - 13, a Convention on 'Migratory Species' was held from 15th - 20th February, 2020 at Gandhinagar, Gujarat. This exhibition was organized to showcase India's diversity of ecosystem, landscapes and efforts made by the states to encourage & comfort migratory species in their respective areas.

Chandigarh is host to a large number of migratory birds like *Rudy Shelduck*, *Common Pochard*, *Northern Pintail* etc. The Department of Forest & Wildlife, Chandigarh showcased the migratory birds of Chandigarh and initiatives taken by the Chandigarh Administration to make their stay comfortable, healthy & happy.



GREEN PLEDGE ON NEW YEAR

In order to bring people closer to the nature, the Department of Forests & Wildlife, Chandigarh Administration organized a week-long event from 1st January on the occasion of New Year 2020 for the public at Sukhna Lake by taking a pledge and tying a green ribbon of commitment for the protection of Mother Nature wherein officials from all the Departments of Chandigarh Administration, visitors and general public participated and showed their keenness in environment and its protection.



HALLOWEEN 2019 - THE HARROWS OF PLASTIC

To sensitize people with the ghastly implications of the use of 'single use plastic' on environment, a Halloween rally was held on 31st October, 2019 on the theme of 'The Harrows of Plastic'.

The rally jointly organized by the Department of Public Relations, Environment Department and the Government College of Arts as a part of the #PlasticKaTimeUp Campaign to sensitize the public about the harms of single use plastic.

During the occasion, Sh. Debendra Dalai, IFS, CCF, Chandigarh flagged off the rally that moved from Lake Club towards Sukhna Lake in the evening. To ensure that the message can be communicated to a greater audience, the students of Arts College fabricated a 50 feet long ghostly creature – the Plastic Demon made of fibre glass.





INSTALLATION OF SOLAR POWER PLANT AT GMCH SECTOR 32

Installation of roof top solar power plant is one of the important green initiatives of Chandigarh. A solar power plant of 400 kWp at Govt. Medical College & Hospital, Sector-32, Chandigarh was inaugurated by Smt. Kirron Kher, Hon'ble Member of Parliament, Chandigarh in gracious presence of Sh. Manoj Parida, IAS, Adviser to the Administrator, UT Chandigarh. The Plant has been installed and executed by CREST (Chandigarh Renewable Science & Technology Promotion Society) on the rooftop of the Medical College. The plant will generate approximately 5,20,000 units of electricity annually and shall help Chandigarh in marching towards 100% Renewable Energy Powered. The installation of new solar power plant will reduce electricity bill of GMCH by approximately Rs. 36 lakhs annually.



Modern technology owes ecology

WILDLIFE WEEK



'SHRAM DAAN DIWAS' AND LAUNCHING OF WILDLIFE WEEK

On the eve of 150 Years of Celebrating Gandhi Jayanti, the Department of Forest & Wildlife, Chandigarh launched Wildlife Week-2019 at Capitol Complex, Sector-2, Chandigarh. The theme of the event was "Lets Pledge Today to Make Chandigarh Plastic Free". Sh. V.P. Singh Badnore, Hon'ble Governor of Punjab and the Administrator, UT Chandigarh was the Chief Guest. During the occasion, the Chief Guest delivered oath to senior officers of Chandigarh along with general public regarding 'Plastic Free Chandigarh' and stressed on the importance of wildlife in the ecosystem.



SIGNATURE CAMPAIGN ON CONSERVATION OF WILDLIFE

The Department of Forest & Wildlife, Chandigarh organized a 'Signature Campaign' on 2nd October, 2019 at Sukhna Lake, Chandigarh. During the event, many people signed and took pledge to protect wildlife. On the occasion, Chief Conservator of Forests in his address, highlighted the principle of co-existence of human and wildlife.



Signature Campaign Wildlife Week Celebration

I Pledge to protect wildlife and forest of UT, Chandigarh
and I will contribute in increasing green cover of city beautiful.

DEPT. OF FORESTS & WILDLIFE
- 160018. Phone: 0172-270001, 270002, 270003, 270004, 270005, 270006, 270007, 270008, 270009, 270010, 270011, 270012, 270013, 270014, 270015, 270016, 270017, 270018, 270019, 270020, 270021, 270022, 270023, 270024, 270025, 270026, 270027, 270028, 270029, 270030, 270031, 270032, 270033, 270034, 270035, 270036, 270037, 270038, 270039, 270040, 270041, 270042, 270043, 270044, 270045, 270046, 270047, 270048, 270049, 270050, 270051, 270052, 270053, 270054, 270055, 270056, 270057, 270058, 270059, 270060, 270061, 270062, 270063, 270064, 270065, 270066, 270067, 270068, 270069, 270070, 270071, 270072, 270073, 270074, 270075, 270076, 270077, 270078, 270079, 270080, 270081, 270082, 270083, 270084, 270085, 270086, 270087, 270088, 270089, 270090, 270091, 270092, 270093, 270094, 270095, 270096, 270097, 270098, 270099, 270100.



EXHIBITION ON BIRDS OF CHANDIGARH

The Department of Forest & Wildlife, UT Chandigarh in collaboration with Chandigarh Birds Club organized an 'Exhibition on Birds of Chandigarh' on 2nd October, 2019 at Sukhna Lake in which huge participation was recorded. People were made aware about role and importance of birds.

Chandigarh is home to more than two hundred species of birds. Department organizes a Bird Walk behind Sukhna Lake every month.

Exhibition Organised by
Department of Forests & Wildl.
& Chandigarh Bird Club

Photo Exhibition
on

WILDLIFE WEEK CELEBRATION

Date: 2nd October, Time: 04-30 pm
Venue: Sukhna Lake, Chandigarh

DEPARTMENT OF FORESTS & WILDLIFE
Paryavas Bhawan, Sector 10-B, Modya Marg,
Chandigarh - 160016. Phone: 0172 - 2780204
Email: forestchandigarh@gmail.com

EXHIBITION ON CHANDIGARH BUTTERFLIES

The Department of Forest & Wildlife, Chandigarh organized an 'Exhibition on Chandigarh Butterflies' on 2nd October, 2019 at regulatory end near Nature Interpretation Center, Chandigarh that drew the attention of good number of visitors. City beautiful is home to over hundred butterflies and 92 butterflies were seen and recorded in Butterfly Park, Sector-26, Chandigarh. On this occasion, visitors were educated on rich diversity and importance of butterflies in the ecosystem.

Host plants like Mango, Salix, Citrus spp., Amla, Ashoka, camphor, etc. are planted for the breeding of butterflies. Besides this, Nectar plants such as Dahlia, Pansy, Marigold, Sweet peas, Antrinium, Cosmos, Zinnia etc. are planted seasonally. Butterflies also derive nourishment from pollen, tree sap, rotten fruits, dun and dissolved minerals in wet sand or dirt. Rotten fruits are placed at different locations of the Park to attract the butterflies. The Department in collaboration with various Eco Clubs organizes visits of school students to sensitize them about this beautiful creation.



The best time to plant a tree is now.



LAUNCH OF 'SUKHNA MITRA

During the celebration of Wildlife Week, the Deptt. of Forest & Wildlife, Chandigarh organized a gathering on 3rd October, 2019 in City Forests, Chandigarh on the theme 'Friends of Sukhna' in which inhabitants of village Kaimbwala participated. During the event, the officers of the department inculcated the villagers about the importance of Wetland with special emphasis on Sukhna Lake. Their cooperation, support in proper upkeep of the Sukhna Lake was sought.

"HOW TO PRESERVE SUKHNA LAKE"

Venue- City Forests
Near Lake Sports Complex
Time- 09:00 AM
Date: 03-10-2019



ART EXHIBITION

With the objective to bring people together for saving the environment and wildlife, the Department of Forest & Wildlife, Chandigarh in collaboration with Yuvsatta - an Environmental NGO, Art Dialogo Asia and the Eco Club of Carmel Convent School, Chandigarh organized an Art Exhibition on the theme of **“Living in Harmony with Nature”** on 3rd October, 2019 at Sukhna Lake.

More than 50 artworks by Carmel students were on display. The art exhibition was inaugurated by Sh. Debendra Dalai, Chief Conservator of Forests and Wildlife. Speaking on the occasion, Sh. Dalai said, “Art is one of the best ways to spread the message of environment conservation, which depicts a story in itself and can bring the change on a larger scale. Sometimes, we need creativity to create an impact and make things happen”.





RELEASE OF 'SPECIAL POSTAL COVER' ON STATE BIRD OF CHANDIGARH

The Department of Forest & Wildlife, Chandigarh in collaboration with Department of General Post Office (GPO), Chandigarh released a 'Special Postal Cover' on State Bird of Chandigarh on 4th October, 2019 at Paryavaran Bhawan, Chandigarh.

Department had prepared Special Postal Cover on 'Indian Grey Hornbill – The State Bird of Chandigarh' in collaboration with Department of Posts. Sh. Manoj Parida, IAS, Adviser to the Administrator, Chandigarh released the Special Postal Cover in the presence of Sh. Anil Kumar, IPOs, Chief Post Master General, Punjab.

Other prominent personalities present on the occasion included Sh. Debendra Dalai, IFS, CCF, Chandigarh, Sh. T.C. Nautiyal, CF and Dr. Abdul Qayum, IFS, DCF.

SPECIAL COVER / विशेष आवरण

व्यजीव सप्ताह समारोह
Wildlife Week Celebration
02-10-2019 TO 09-10-2019



भारतीय ग्रे हॉर्नबिल -INDIAN GREY HORNBILL
चण्डीगढ़ का राज्य पक्षी -STATE BIRD OF CHANDIGARH



"SAVE WILDLIFE-SAVE ENVIRONMENT"

भारतीय ग्रे हॉर्नबिल (ऑर्निसिथिस हिरोडिस) जंगलीपक्षी में पाया जाने वाला एक आम हॉर्नबिल है। यह ज्यादातर आर्बोरल है और आमतौर पर जेठे में देखा जाता है। उनके पास हल्के भूरे या सुनहले रंग के साथ पूरे शरीर पर भूरे रंग के धब्बे होते हैं। शींग में वक्रता के बिंदु तक फली एक आठवां के साथ सींग करते या गहरे भूरे रंग के होते हैं। वे कुछ बाहरों में पक्षी क्षेत्रों के भीतर घास जलने वाले हॉर्नबिल प्रजातियों में से एक हैं जहां वे बड़े राजसव वृक्षों का उपयोग करने में सक्षम हैं। इसे वर्ष 2009 के दौरान चण्डीगढ़ का राज्य पक्षी घोषित किया गया है।



The Indian Grey Hornbill (*Ocyrobus dinorthis*) is a common hornbill found in Chandigarh. It is mostly arboreal and is commonly sighted in pairs. They have grey feathers all over the body with a light grey or dull white belly. The horn is black or dark grey with a casque extending up to the point of curvature in the horn. They are one of the few hornbill species found within urban areas in many cities where they are able to make use of large avenue trees. It is declared as the State bird of the Chandigarh during the year 2009.



Issued by: Chief Postmaster General, Punjab Circle, Sandesh Bhawan, Sector-17E, Chandigarh-160017

PE/06/2019-20

SENSITIZING THE VILLAGERS ON WILDLIFE RESCUE & MANAGEMENT

In the series of celebration of Wildlife Week-2019, the Department of Forest & Wildlife, UT Chandigarh organized 'Wildlife Rescue' programme on 4th October, 2019 at Botanical Garden, Sarangpur to sensitize the villagers of Dhanas & Sarangpur about various aspects related to wildlife and its conservation. Modern techniques and various equipment such as Net Gun, Tranquilizing Gun, Snake Catcher, Pole, etc. used by the Forest Staff were also demonstrated and necessary knowledge imparted to the villagers to tackle the wildlife in emergency situations.

Department has a dedicated team for handling wildlife cases that works on 24x7 basis. The department has also designed a wildlife Hotline (0172-2700217). One call at any point of time and rescue squad is committed to reach any spot in UT Chandigarh within 30 minutes.





'WALK FOR WILDLIFE' & FUTURE OF WILDLIFE IN OUR HAND'

The Department of Forests & Wildlife, Chandigarh organized "Nature and Wildlife Trek" on 6th October, 2019 at Nepli Forest in Sukhna Wildlife Sanctuary, UT Chandigarh. The event was flagged off by Sh.Sanjay Beniwal, IPS, Director General of Police, Chandigarh. This trekking started from Nepli and culminated at Kansal Log Hut. Around 1100 people participated in the Trek that included School Children, General Public, people from Media and Bird Watchers with binoculars. During the occasion, the participants were educated on the theme of Wildlife Conservation. Many officials from the State Aids Control Society, Chandigarh, students of various schools and colleges, teachers and NGOs also participated in trekking.



SHORT FILM COMPETITION ON 'AIR POLLUTION'

The Department of Forests & Wildlife, Chandigarh organized a Short Film Competition on the theme of 'Air Pollution' on 7th October, 2019 in Paryavaran Bhawan, Chandigarh. During the occasion, Short Films on Air Pollution were screened by the department which were sent by different schools of Chandigarh. Top three Short Films selected were honoured by the department during the Concluding Event of Wildlife Week Celebration.



Stopping pollution is the best solution.

ON THE SPOT INTER SCHOOL PAINTING/DRAWING COMPETITION

The Department of Forest & Wildlife, UT Chandigarh in collaboration with Youth Innovative Society (YIS) – an Environmental NGO, organized an on-the-spot Inter School Painting/Drawing Competition on 5th October, 2019 in Botanical Garden Sarangpur on 'Wildlife Conservation' & 150th Birth Anniversary of 'Father of Nation'.

More than 100 students of various schools of Chandigarh participated in the event. Certificates and mementoes designed on wildlife theme were given to all the participants to encourage them on taking sincere measures for the protection of wildlife.





CONCLUDING FUNCTION OF WILDLIFE WEEK 2019

A Concluding Function on Wildlife Week Celebration 2019 was organized on 24th October, 2019 at Butterfly Park, Sector 26, Chandigarh. Shri V.P. Singh Badnore, Hon'ble Governor of Punjab & the Administrator, UT Chandigarh was the Chief Guest and Sh. Manoj Parida, IAS, Adviser to the Administrator, UT Chandigarh was the Guest of Honour. On this occasion, the Chief Guest launched the '**Logo of Department of Forests & Wildlife Chandigarh**'. He also launched 'Website of the department – 'www.chandigarhforest.gov.in'. Chief Guest also visited Titli Ghar to see various species of butterflies.

While welcoming the guests, Sh. Debendra Dalai, IFS, Chief Conservator of Forests, Chandigarh informed that the Logo is designed with the basic concept of five elements of life, wherein Environment friendly green and the tree made in green represent Prithvi and Vayu besides representing nature. Calm and life-giving logical Blue representing Jal and Aakaash stands for the truth, trust and the serenity being presented by the forests. The national emblem representing the energy of fire exudes pride, power and courage telling that the entity is being handled by the government. Deer in white represents the wildlife and the peace that wildlife deserves. Two hands holding the logo unit connote that the entity needs support and care from all. He further informed that the Website of the Department will help the tourists as well as citizens of Chandigarh to see the nature on a click of a mouse.

During the function, the winners of various competitions held in different schools of Chandigarh during the Wildlife Week were felicitated by the Chief Guest.

Addressing the gathering, the Chief Guest Shri V.P. Singh Badnore congratulated the prize winners and made an appeal to the children to show care and compassion for all forms of life and their conservation. He lauded the effort of the Department for making very sincere effort in connecting people with the much needed subject i.e. Environment. He stated that new website launched for Forest Department is a very citizen friendly approach.

Among prominent persons attending the function were Sh. Manoj Parida, IAS, Adviser to the Administrator, UT Chandigarh, Shri Arun Kumar Gupta, IAS, Principal Secretary (Environment & Forests), Sh. Debendra Dalai, IFS, Chief Conservator of Forests, Chandigarh, Dr. Abdul Qayum, IFS, Deputy Conservator of Forests, Chandigarh and other senior officers of the administration. The function was attended by various Eco-Club in charges, School Principals, Teachers, local public and persons from electronic and print media.





PRIZE FOR TABLEAU ON THE OCCASION OF REPUBLIC DAY

On the occasion of Republic Day celebrations, Range Forest Officer Mr Bhupinder Singh received 3rd prize for Tableau made by the Forest and Wildlife Department showcasing catchment area of Sukhna Lake situated in Lower Shivalik Hills, presence of Wildlife therein and proficiency of the department in all conservation and forestry works.

TRAINING PROGRAMMES

Information is a source of learning. But unless it is organized, processed and available to the right people in a format for decision making, it is a burden, not a benefit.

TRAINING PROGRAMME IN WILDLIFE CRIME CONTROL BUREAU (WCCB), NEW DELHI

A Training of Trainer (ToT) programme on Counter Intelligence was conducted by the Intelligence Bureau (Ministry of Home Affairs), Govt. of India from 29th April to 10th May, 2019 at Assistant Management Authority- CITES, Wildlife Crime Control Bureau (WCCB), Northern Region, Bhikaji Cama Place, New Delhi. Sh. Bhupinder Singh attended the said training.



TRAINING COURSE BY FOREST SURVEY OF INDIA, DEHRADUN

The Range Forest Officer, Nepli Range of Chandigarh department attended the two-days Training Course on "DSS & e-Green Watch & Forest Fire" in August, 2019 and on "Forest Fire" in November 2019 organized & conducted by The Forest Survey of India, Dehradun.



TRAINING PROGRAMME ON “IDENTIFICATION OF BUTTERFLIES & BIRDS”

The Department of Forest & Wildlife, Chandigarh established a ‘Van Vigyan Kendra’ in the Botanical Garden, Sarangpur in collaboration with Forest Research Institute (FRI), Dehradun.

The kendra is established to conduct education and awareness training programs for variety of stakeholders on various subjects related to flora and fauna.

The inaugural training programme was organised by the department for all Eco-Clubs of Chandigarh schools on the theme of ‘Identification of Butterflies & Birds’ in collaboration with the scientists of Forest Research Institute (FRI), Dehradun in February 2020 at Botanical Garden, Sarangpur.



TRAINING PROGRAMME ON “HEALTH ASSESSMENT OF TREES”

A training programme on the theme of ‘Health Assessment of Trees’ was organized by the Department in collaboration with FRI, Dehradun in February 2020 at the Botanical Garden for various Stakeholders and Eco-Clubs of Chandigarh.

WILDLIFE RESCUE & REHABILITATION

Human-Wildlife Conflict has become one of the serious problems in the entire country. Due to loss of Habitat, Habitat degradation, some of the wild animals like Monkeys, Sambhar, Neelgai, Biju etc. come out of forests and invade in city area. To manage this problem, Department of Forests & Wildlife has constituted a full time wildlife squad operating 24 × 7. All the required equipment are available with the department to manage any and every kind of situation.

During rescue operation, a hydraulic based lift for injured animals is used by the department in order to reduce the stress level of the animal. A hotline (0172-2700217) is maintained for wildlife rescue towards efficient information dissemination and better handling. It is claimed that not a single call can go unreported. In case of emergency, senior officials including other Wildlife team members also join, as per the charter of task group recently constituted. Over 600 snakes and dozens of other wild animals like Monkeys, Sambar, Neelgai, Biju etc. are rescued by the Wildlife Squad of the department and released in the Sukhna Wildlife Sanctuary during the year 2019-20.

A leopard was rescued from #68, Sector 5, Chandigarh. The animal strayed out of forests and entered the bungalow taking advantage of Curfew imposed in the City due to pandemic of COVID-19 virus.

In a very swift and skilled operation, the leopard was successfully tranquilized without any harm to the animal. Vet Services of Chhatbir Zoo were also taken during the operation. The leopard was then released in the Morni Division of Haryana.





Chapter 3 VANMAHOTSAVA & PAUDH MELA

LAUNCH OF PLANTATION DRIVE

The word “*Vana Mahotsav*” refers to “tree-plantation ceremony”, which is celebrated every year in the month of July to inculcate the need for growing trees and preserving them, among the general public. To observe this tree plantation festival in a befitting manner by involving various Greening agencies like NGOs, RWAs, Eco-Clubs besides Government agencies, Department of Forest & Wildlife, Chandigarh Administration organized ‘*Van Mahotsava-2019*’ on 16th July, 2019 in Panjab University Campus in which Sh. V.P. Singh Badnore, Hon’ble Governor of Punjab & the Administrator, UT Chandigarh was the Chief Guest. He launched Van Mahotsav 2019 by planting a ‘*Kalpatru*’ plant. Sh. Manoj Parida, IAS, Adviser to the Administrator, UT Chandigarh, Sh. Arun Kumar Gupta, IAS, Principal Secretary (Forests) and Prof. Raj Kumar, Vice Chancellor of Panjab University also planted saplings on the occasion.

During the function, the “State of Environment Chandigarh-2018” prepared by Department of Environment, Chandigarh which covers all the major environmental aspects of Chandigarh, was released by Hon’ble Governor. He also released the booklet on “Medicinal Plants of Chandigarh” prepared by Department of Forest & Wildlife, UT Chandigarh.

Time spent among trees never goes wasted.

PAUDH MELA INAUGURATION AT SUKHNA LAKE

A Paudh Mela near Sukhna Lake Club from 16th to 17th July, 2019 was organized, where the general public collected saplings.



FOREST DEPARTMENT AT YOUR DOOR STEPS

A unique initiative was started by the Dept. of Forest & Wildlife titled 'Forest Department at your Door Steps'. This scheme of free distribution of plants/saplings to general public without any formal application, eases the governance in forest. A specially designed vehicle for free distribution was launched by the Chief Conservator of Forest. The idea is to assist interested public in plantation activity by providing them tree saplings of their choice at their door steps.



“The initiative will help nature lovers and they can become major part of afforestation activities.”

- Sh. Debendra Dalai, CCF



ECO CLUB DAY

Various schools planted saplings in their premises on Eco Club Day on 18 July, 2019 to celebrate Van Mahotsav. The ceremonial function was held at Govt. Girls Model Sr. Sec. School, Sector 18, Chandigarh. Saplings were planted by the teachers and the students in the school premises.

The objective of celebrating the 'Eco Club Day' is to sensitize the school children to generate awareness for protection and conservation of flora & fauna.



We are stealing the future and calling it GDP.



VAN MAHOTSAV CELEBRATIONS IN SCHOOLS

Herbal plants were planted by the Department of Forests and Wildlife along with Yuvsatta - NGO, Earth Day Network India and Srijan Eco Club of CL Aggrawal DAV Model School, Sector- 7B, Chandigarh. Prominent among those who participated in the initiative included Sh. Debendra Dalai, IFS, Chief Conservator of Forests and Dr. Abdul Qayum, IFS, Deputy Conservator of Forests, Environmentalist Sh. Kubhushan Kanwar and coordinator of Yuvsatta - NGO Sh. Pramod Sharma.

Addressing the students and teachers of the school, Sh. Debendra Dalai said that for the past 70 years, Van Mahotsav is celebrated to help spread awareness about the harms caused by cutting down of trees. The need of the hour is that every citizen plants a sapling during the Van Mahotsav.

On this occasion, herbal plants like *giloe*, *elaichi*, aloe vera, *aparajita*, *patharchatta* etc. were planted.

HERBAL DAY

A ceremonial function to celebrate Herbal Day was held at St. Joseph School, Sec.44, Chandigarh to observe Van Mahotsav-2019 wherein Sh. Debendra Dalai, IFS and Director Environment was the Chief Guest. Sh. Dalai, told that the overall objective of celebrating the 'Herbal Day' was to sensitize the masses especially school children to generate awareness about the medicinal values of various plants available in nature.

Another function was held at Govt. Model Senior Secondary School, Sector-33, Chandigarh in which Dr. Abdul Qayum, IFS, Deputy Conservator of Forests, Chandigarh planted the sapling of 'Rudraksh' at school premises. He distributed herbal plants among school children, teachers and staff. Dr. Abdul Qayum emphasized about the need of herbal plants in curing of our day-to-day health problems. He exhorted school students to be sensitive towards nature and plant more & more trees, so as to make Chandigarh a cleaner and greener city.

Every year, the 'Herbal Day' is celebrated across all Eco Clubs in various schools of Chandigarh.



When the soil disappears, the soul disappears.

NGO DAY

City based Environmental NGO 'Youth Innovative Society' observed NGO Day on 23rd July, 2019 in Collaboration with Govt. High School-01, Dhanas with Students of Samvedna Eco Club. On this occasion, Dy. Conservator of Forests Dr. Abdul Qayum IFS Planted a Sapling along with School Principal Ms. Manpreet Kaur, Eco Club In charge, Sh. Suraj Bhan and volunteers of Youth Innovative Society.



PALASH DAY

Palash Day was celebrated on 24th July, 2019 at DAV Sr. Sec. School, Sector-8C, Chandigarh wherein the chief guest Dr. Abdul Qayum, IFS, Dy. Conservator of Forests, Chandigarh planted a sapling of 'Palash' in the school premises.

A Teacher's Training Programme organized by WIPRO Earthian, Yuvsatta -NGO & Dayanand ECO Club of DAV Sr. Sec. School, Sector- 8C, Chandigarh was also inaugurated. More than 50 teachers from 40 prominent Schools & Colleges of the tricity participated in the event. Prominent amongst those who were present on the event included Dr. Vibha Ray, Principal of School & Sh. Pramod Sharma, Coordinator, Yuvsatta - NGO.

Another function was organized by the Department of Forest & Wildlife in collaboration with Yuvsatta at Govt. Model High School, Sec. 20-D, Chandigarh in which the Chief Guest planted the sapling of 'Amrood' at school premises. More than 100 students participated in the event.





“Chandigarh is the only city in India, which has forests inside and at present it has over 46% green cover...”

- Sh. Manoj Parida, IAS



CONCLUDING FUNCTION OF VAN MAHOTSAV

A Concluding Function of Van Mahotsav-2019 was organized by the Department of Forest & Wildlife, UT, Chandigarh at Kaimbwala Road behind Rock Garden where a massive plantation was done by the school students of Govt. Girls Model Sr Sec School, Sector-18C, Moti Ram Arya Sr Sec Model School, Sector-27A & CL Aggarwal DAV Model School, Sector-7B, Chandigarh. The Advisor to the Administrator, Sh. Manoj Parida graced the occasion as Chief Guest. While addressing the nature lovers and students he said "Chandigarh is the only city in India, which has forests inside and at present it has over 46% green cover, which we aim to increase it further so that people of Chandigarh can have best quality of available oxygen". He further said, "Chandigarh is not only smart city but it is a clean and greenest city also." Ceremonial plantations were also done by the Principal Secretary, Forests, Sh. Arun Kumar Gupta along with other senior officers from the administration.

In order to enthuse motivation among forests' officials, a competition among all eight nurseries of Chandigarh was organized for the 'Best Nursery Award 2019'. This year, the Best Forest Nursery Award was given to nurseries at Botanical Garden & Daria.





Chapter 4

TREE FELLING RULES IN CHANDIGARH

THE CHANDIGARH TREES PRESERVATION ORDER- 1952

In exercise of the powers conferred by section 11 of the Capital of Punjab (Development and Regulation) Act, (President's Act V of 1952), the Chief Administrator is pleased to make the following Order:-

1. Title and extent

- A. This Order shall be called the Chandigarh Trees Preservation Order, 1952.
- B. It shall come into force at once.

2. Definitions: In this Order, unless there is anything repugnant in the subject or context,-

- A. "Operational land" means land which is used by public service undertakers for the purpose of carrying on the undertaking of such undertakers.
- B. "Owner" includes a mortgagee with possession.
- C. "Public service undertakers" means a person (including a firm or other body of individuals whether incorporated or not) who is carrying on or is authorized to carry on any public utility service including a railway, light railway, or is engaged in road transport, water transport, disposal of waste, or in the supply of electricity or water.
- D. "Zoning Plan" means the numbered plan authenticated by the Chief Administrator and kept in his office, defining the layout of any numbered sector showing the streets, boundaries of building sites, open spaces, position of protected trees or other features and showing the specified land, building lines, permissible heights of buildings, site coverages and other restrictions on the development of land or buildings.

Trees are poems that earth writes upon the sky.

3. Application:

- A. No person shall, except with the permission of the Chief Administrator, cut down, lop or destroy or cause or permit the cutting down, lopping or destruction of any tree in any part of the woodland area shown in the zoning plan as "protected trees" or in "protected woodland areas".
- B. An application under sub-clause (i) shall be in writing and shall specify the trees, groups of trees or the woodland area to which the application relates, and the operations for the carrying out of which the permission is required; and where necessary, for the identification of such trees, groups of trees or woodland area, shall be accompanied by a map or plan on a scale of 1" to 80".

4. Permission or refusal:

- A. The Chief Administrator may grant such permission either unconditionally or subject to such conditions (including conditions requiring the replacement of any one tree by one or more trees of the same or a specified kind on the site or in the immediate vicinity thereof, as he may deem fit, or he may refuse permission.
- B. Where the Chief Administrator refuses permission under this Order or grants such permission subject to conditions, he shall, when refusing or granting permission, certify that in respect of any trees, groups of trees or any woodland area for which he has so refused or granted permission, he is satisfied that:
 - (a) refusal or permission is in interest of forestry, or (b) in case of woodland area, it has amenity value in relation to woodland character of area, or (c) in case of trees or groups of trees, trees have an outstanding amenity value for offering shade to building or roads, or (d) there is any other special amenity provided by trees or woodland area.

- 5. Register of applications - Chief Administrator shall maintain a register of applications containing information as to the nature of application, name of the applicant, the decision thereon and any directions as to the replanting of the trees and every such register shall be available for inspection by public during office hours.
- 6. Applications deemed to have been sanctioned - Application made under clause 3 of this Order shall be deemed to be sanctioned if a decision thereon is not conveyed to the applicant within one month of the receipt of the application by the Chief Administrator.
- 7. Register of trees - Protected trees, groups of trees or woodland areas shall be listed by the Chief Administrator in a register.
- 8. Numbering of trees - All protected trees or groups of trees or woodland areas shown on the zoning plan or listed in the register of trees shall bear a number corresponding to its number in the register of trees.
- 9. Replanting - Where permission is granted under this Order or otherwise, the Chief Administrator may give directions to the owner of any site as to the planting or replanting of any trees or kinds of trees. Any such directions may include requirements as to-
 - (a) species of trees. (b) planting distances. (c) the erection and maintenance of fencing necessary for protection of the planted or replanted trees. (d) the preparation of ground, drainage, removal or brushwood, lop and top; and (e) protective measures against drought or fire.

10. Exemptions - This Order shall not apply to -

- A. the cutting down, topping or lopping of any tree in an operational land;
- B. for normal forestry operations in young plantations such as weeding, brushing and high pruning;
- C. the usual pruning or trimming of a tree from time to time.



PRUNING OF TREES UP TO 90 CM OF GIRTH CLASS

The competent authority in respect of pruning of trees upto 90 cm of girth class in Chandigarh shall be Executive Engineer (Horticulture), Municipal Corporation and Executive Engineer (Horticulture), Engineering Department, UT, Chandigarh as per their area of jurisdictions.

The concerned Executive Engineer should make a pruning plan for all types of pruning i.e. under competence of aforementioned authority before monsoon and during winter season so that such dangerous/ over grown branches can be removed well in time for safeguarding life, property and tree themselves. A record of pruning done shall be maintained by Executive Engineer concerned including before and after photographs.

The pruning of trees should be carried out in a scientific and symmetrical way instead of just carrying out pruning on one side.

This is issued with the approval of Worthy Advisor to the Administrator, UT Chandigarh.



PROCEDURE FOR FELLING OF TREES IN CHANDIGARH

For dead & dry trees:-

Two officials of following rank/ designation from 2 different departments shall certify that the tree in question is dead & dry and is required to be removed immediately:-

- A. SDO (Horticulture) of Municipal Corporation / SDO (Hort.) of Engineering Department, Chandigarh, as the case may be, as per their area of jurisdiction.
- B. Range Forest Officer (RFO), Chandigarh Range.

In case of dead & dry tree felling proposal from Forest Department besides Range Forest Officer concerned, SDO (Hort.) of Engineering Department shall certify jointly along with RFO.

Once it is certified by two officials that the tree is dead & dry, the concerned Head of Department i.e. Chief Engineer, UT Chandigarh or Chief Conservator of Forests or Commissioner, Municipal Corporation, as per their area of jurisdiction, shall be the authority to accord approval for removal of dead & dry trees.



For felling of Green Trees

The present system of getting approval from the Advisor to the Administrator, UT, Chandigarh for felling of green trees shall be continued without any change.



Trees posing immediate threat to life and property:

In such cases also, two officials of different departments, as in the case of dead & dry tree, shall certify in writing after inspection that the "tree in question is dangerous for human life and property and required to be removed immediately to save life & property".

Following guidelines while felling of trees are to be followed by all departments:

- A. The concerned department i.e. Municipal Corporation, Chandigarh or Engineering Department or Forest Department shall also ensure that minimum 5 trees are planted in compensation to removal of one dead & dry tree with the condition that at least one tree should immediately be planted at the place where this dead & dry tree has been removed.
- B. It has also been observed that even after approval of Competent Authority for removal of trees, replacement of tree is taking place at some other place. It is, therefore, desirable that at least one sapling should be planted immediately at the same place after removal of the tree, if there is a possibility in terms of space etc.
- C. Municipal Corporation/ Engineering Department/ Forest Department to ensure that trees which are being planted in re-plantation should be of same species that are planted as part of City Urban Planning/ Heritage and not of any other species.
- D. Once the permission for dead/dry tree has been given by the competent authority, the concerned Department should take immediate steps to remove it, so as to save life & property. It is advisable that a Rate Contact for cutting of trees should always be in place so that once permission to cut dead/ dry tree is given, it is removed immediately without loss of time.

Pruning of Trees

Pruning of trees up to 90 cm of girth class in Chandigarh shall be undertaken by The Executive Engineer (Horticulture), Municipal Corporation and The Executive Engineer (Horticulture), Engineering Department, Chandigarh, as per their areas of jurisdiction.

The concerned Executive Engineer shall make a pruning plan for all types of pruning i.e. under competence of aforementioned authority before monsoon and during winter season so that such dangerous/ over grown branches can be removed well in time for safeguarding life, property and tree themselves.





Chapter 5 GREENING CHANDIGARH ACTION PLAN 2020-21

The Greening Chandigarh Action Plan 2020-21 is an effort to address the city's challenges of rapid urbanization by integrating sustainable urban development & environmental planning. By focusing on the 3Es - Economy, Environment and Equity, the plan provides the framework for Chandigarh to become a greener and cleaner city.

The objective of the plan is to ensure that Chandigarh evolves as a city that has built conditions for environmental sustainability, so that it will be inherited by future generations who will gain benefits from it in the long-run. The plan summarizes the initiatives and measures to implement the plan.



One that plant trees loves others, besides oneself.

PLANTATION TARGETS FOR THE YEAR 2020-21

S.NO.	Department/ Organization	Saplings to be planted (in Nos.)	Seed Sowing in Plants (in Nos.)	Stem Cutting (in Nos.)
1. A	Forest Department	70,000	3,00,000	3,20,000
1. B	Free Distribution	65,000		
2. A	Engineering Department (Hort. Div.) (Plantation)	30,000		
2. B	Distribution/ Sale of Plants	25,000		
3. A	Municipal Corporation, Chandigarh (Plantation)	50,000		
3. B	Distribution/ Sale of Plants	15,000		
	Total	255,000	3,00,000	3,20,000

65,000

Free distribution of seedlings of Mango, *Neem*, *Jamun*, *Arjun*, *Kusum*, *Peepal*, *Kachnar*, *Amaltas*, etc. and Medicinal & Herbal plants by Forest Department to Educational Institutions, NGO's, RWAs, local residents/farmers, Religious Institutions & other organizations.

40,000

Selling of fruit & ornamental trees on subsidized rates by the Horticulture Wing of the Municipal Corporation (**15000**) and and the Engineering Department (**25000**).

Environment is everyone's responsibility to protect.

HIGHLIGHTS OF 'GREENING CHANDIGARH ACTION PLAN' 2020-21

1. During the Monsoon season, 2,55,000 saplings will be planted in a phased manner by various Departments over places like Sukhna Wildlife Sanctuary, Reserved Forests, Roadsides and central verges, Parks, Green belts, Community land, Government offices, Residential Complexes, Markets and in other available open spaces.
2. Department of Forests and Wildlife will be sowing 3,00,000 seeds of various forestry species on eroded hill slopes in Wildlife Sanctuary Area and blank patches of Reserve Forest Area.
3. Plantation of Fruit bearing species in Sukhna Wildlife Sanctuary, Reserve Forest Area & City Forest Area.
4. Planting of 3,20,000 stem cuttings of *Arundo donax* (good soil binder) along choe banks to stabilize them against soil erosion in the catchment area of Sukhna Lake.
5. Plantation drive will be organized in the Schools, Colleges, Residential Colonies, Villages, Hospitals and other public and private lands as a part of 'Van Mahotsava' celebrations during the month of July-August, 2020.
6. The Paudh Mela will be organized at the Lake Club Parking area near Sukhna Lake during the inauguration of Van Mahotsava-2020, where stalls of Forest Department & Horticulture Wings of Engineering & Municipal Corporation, Chandigarh will be installed for distribution of Seedlings from a common place on the onset of monsoon.
7. Planting of hardy, shade bearing, long living and pollution abetting species in the locations identified for having more pollution, particularly on the roadsides.
8. Establishment of Herbal Gardens in Schools, Colleges and other Institutions.
9. Replenishing and conserving the biodiversity of nature spots like Reserve forests, green belt, Sukhna Wildlife Sanctuary and Sukhna Lake by removing obnoxious weeds and planting/ introduction of indigenous palatable species.
10. Post planting care by ensuring proper protection and regular watering will be done by all three greening agencies & public.
11. A selection of shrubs or dwarf species for plantation under the electric and telecom transmission lines.
12. Treatment of the termite infested trees as per the expert advice of the scientists of the Forests Research Institute (FRI), Dehradun, Uttarakhand.
13. Awareness generation programmes will be organized to sensitize the masses for protection and conservation of flora and fauna.
14. Programmes to include information on various insect & pest diseases occurring on major tree species along with their control measures.



COLLECTION OF MANGO SEEDS A UNIQUE CONSERVATION ATTEMPT

Department of Forests and Wildlife, Chandigarh has come up with a unique idea of collecting mango seeds from the residents. This is an effort to involve people in the plantation drive to save the environment. Such initiatives will enhance the sense of belonging and participation of people towards conservation of nature.

The residents just need to put dry mango seeds into the seed boxes and the department will collect them. The seeds will be nurtured by the department and the surviving saplings will be planted next year during the plantation drive. The department has placed bins at the Botanical Garden near Sarangpur village.



DEPARTMENT OF FORESTS & WILDLIFE CHANDIGARH ADMINISTRATION

DETAILS OF PLANTATION TARGET FOR THE YEAR 2020-21

S.NO.	Chandigarh Range	Target (No. of Sapling)			Species to be Planted	Seed sowing in patches
		Trees	Shrubs	Stem Cutting		
1.	Sukhna Wildlife Sanctuary i.e. Barotiwala and Kansal Block	20000		75,000	Amaltas Kikar Arjun Lagerstroemia	1,50,000
2.	Lake Forest	4500	1000		Bougainvillea Neem Jamun Papri	
3.	Patiala-ki-Rao Forests	4000	2000	—	Jungle Jalebi Semal	
4.	Southern Sector	2500	2000		Kachnar Shisham Kaner Toot	
5.	Botanical Garden	500	1000		Khair	
	Total	31,500	6000	75,000		1,50,000

The battle for life on earth will be won or lost in cities.

S.No.	Nepli Range	Target (No. of Sapling)			Species to be Planted	Seed sowing in patches
		Trees	Shrubs	Stem Cutting		
1.	Piplanwali & Ambika beats	3000	1000	140000	Arjun Bougainvilla Knar Kikar Junglejlebi Papri Shisham Toot	1,50,000
2.	Tootan wali beat	3000	1000	70000		
3.	U/Lower Nepli beats	4000	2000	20000		
4.	U/Lower Ghareri beats	4000	2000	20000		
5.	Manimajra beat	6750	2000	—		
6.	Hallomajra beat	4250	2000	—		
	Total	25000	10000	250000		1,50,000
	Grand Total	56,500	16,000	3,25,000		3,00,000

**ENGINEERING DEPARTMENT (HORTICULTURE WING)
CHANDIGARH ADMINISTRATION
DETAIL OF PLANTATION TARGETS FOR THE YEAR 2020-21**

A.L.O. 1							
S.No.	Name of Road	Name of Plant		Number of Saplings			Total
		Trees	Shrubs	Trees	Shrubs	Others	
1.	Purv Marg, Sector-31 to 48, NH-21 Tribune Chowk to UT Boundary, Zirakpur, Chd.	Mixed Trees	Mixed Shrubs	175	2000	Nil	2175
2.	Vikas Marg/Outer Dakshin Marg, Sector-44 to 47 and Sector- 48 to 51, Chandigarh	Chakrassia	Boungainillea & Kaner	250	1200	Nil	1450
3.	GMCH Sector 32 & Residential Area of GMCH Flats Sector 32 & 48	Mix Trees	Mix Shrubs	60	600	280	940
4.	Vikas Marg/Outer Dakshan Marg, Sector-52 to 56 and Sector- 39 to 43, Chandigarh	Chakrassia	Boungainillea & Kaner	225	2200	Nil	2425
5.	Jan Marg, Kisaan Bhawan, Sector-35 to UT Boundary, Mohali, Chandigarh	Kusum, Pikkhan & Mahagoni		70	150	Nil	220

Green revolution is the best solution to arrest pollution.

S.No.	Name of Road	Name of Plant		Number of Saplings			Total
		Trees	Shrubs	Trees	Shrubs	Others	
6.	M/o Palm Garden Sector – 42, Chandigarh	Mixed Trees	Mixed Shrubs	50	1200	300	950
7.	M/o Garden of Spring, Sector -53, Chandigarh	Mixed Trees	Mixed Shrubs	25	600	Nil	1225
8.	M/o Garden of Conifers, Sector-52, Chandigarh	Mixed Trees	Mixed Shrubs	150	900	Nil	1050
9.	Govt. Nursery, Sector-23C, Chandigarh			Nil	150	Nil	150
	Total			1005	9000	580	10585

A.L.O. 2							
S.No.	Name of Site	Trees	Shrubs	Trees	Shrubs	Others	Total
1.	Madhya Marg, Sec-9 to 12 & 14 to 17	Kusum Amaltas	Bougainvillea	40 40	1500		1580
2.	Jan Marg, Sec-3, 4, 9 & 10 & Sec-17, 16	Chakrassia Grivelia	Bougainvillea	30 30	300		360
3.	Uttar Marg, Sector – 1 to 5	Amaltas	Mix Shrubs	20	160		180
4.	High Court, Sector – 1	Amaltas Gulmohar	Mix Shrubs	20 10	180	50	260
5.	Capitol Complex, Sector-1	Amaltas Gulmohar	Mix Shrubs	30 30	2000		2060
6.	Purv Marg, Transport Light to Tribune Chowk	Trees	Bougainvillea	80	1000		1080
7.	Madhya Marg, Press Light to Transport Light	Chakrassia	Bougainvillea	50	1500		1550
8.	Residential Building Sector-3, 4, 5, 7 & 19	Mix Tree	Mix Shrubs	20	1200	200	1420
9.	Transport Chowk to UT Boundary Kalka Road	Alstonia	Mix Shrubs	40	1000		1040
10.	I.T. Park Road to Manimajra	Moulsessarrie Mahogany	Bougainvillea	40 30	2000		2070
11.	Route No. 2, Hallowmajra Chowk to UT Boundary	Legerstromea Kachnar	Kanner	60 60	300		420
12.	UT State Guest House, Sec-6,	Mix Trees	Mix Shrubs	10	50	50	110
13.	Police Lines, Sector-26	Mix Trees	Mix Shrubs	20	160		180

Nurture the nature, so that we can have a better future.

S.No.	Name of Site	Trees	Shrubs	Trees	Shrubs	Others	Total
14.	Deluxe Building, Sector-9	Amaltas	Mix Shrubs		150	50	200
15.	Sukhna Lake Sector-6	Kachnar	Thuja Mix Shrubs	40	1000		1040
16.	Raj Bhawan Punjab S/6	Mix Trees	Rose Mix Shrubs	10	500	50	560
17.	Raj Bhawan Haryana S/6	Mix Trees	Rose Mix Shrubs	10	500	50	560
18.	Dashin Marg from Tribune Chowk to UT boundary Mullanpur	Mix Trees	Mix Shrubs	60	1500		1560
19.	Residential Buildings Sec-16 & 24	Mix Trees	Mix Shrubs	20	2000	50	2070
20.	PGI to Mullanpur UT Boundary, Chandigarh	Mix Trees	Mix Trees	100	500		600
21.	Mullanpur Road to IRB Sarangpur UT Boundary Chandigarh	Mix Trees	Mix Trees	100	500		600
		Total		1000	18000	500	19500
		Grand Total		2005	27000	1080	30085

MUNICIPAL CORPORATION OF CHANDIGARH (HORTICULTURE DIVISION)

TREE PLANTATION TARGETS FOR THE YEAR 2020-21

S.No.	Area	Target		
		Trees	Shrubs	Total
1.	Northern Sectors' Parks	545	4100	4645
2.	Southern Sectors' Parks	955	8075	9030
3.	Green belts Sector 1 to 11, 15 to 19, 20, 21 to 25, 26 to 35, 36 to 38, 38 West, 39 to 42, 43 to 52, 56, 60, 61, 63, Cactus Park, Ram Darbar, Maulijagran, NAC Manimajra & Maloya	1150	12555	13705
4.	Nallah (N' Choe) Sector 3, 10, 16, 23, 36	175	700	875

Our planet's alarm is going off, and it is time to wake up

S.No.	Area	Target		
		Trees	Srcubs	Total
5.	Community Centers & Primary Schools	466	1985	2451
6.	Rehabilitation Colonies	348	2115	2463
7.	City Centre Sec 17 & 34	85	300	385
8.	Plantation in Gardens	375	2350	2725
9.	Northern Sector Roads (V3 to V6)	280	8200	8480
10.	Southern Sector Roads (V3 to V6)	1105	8000	9105
11.	Parks in Modern Housing Complex Manimajra, Central Park, Maulijagran	250	1200	1450
12.	Plantation in Sahaj Safai Kendras (SSK's) Sec 4, 9, 11,15, 16, 18, 19, 20, 21 to 24, 33 to 35, 43 to 45, 49 to 52 & 61	60	70	130
13.	Mango Garden Sec. 1, 28 & 29, Chd & Ind. Area Ph.I, II, Rajindra Park (Mango Garden)	350		350
14.	Villages- Kishangarh, Makhan Majra, Maulijagran, Khuda Lahora, Dhanas, Sarangpur, Khuda Ali Sher, Kaimbwala, Palsora & Khudda Jassu	400	1725	2125
	Total	6544	51375	57919

PLANTATION TARGETS FOR EDUCATIONAL INSTITUTIONS AND OTHER DEPARTMENTS/ ORGANIZATIONS FOR 2020-21

Organization/Institution
Free distribution of Saplings by Forest Department, Chandigarh and selling of saplings on subsidized rates by the Horticulture Wing of Municipal Corporation, Chandigarh and Engineering Department, Chandigarh to various Schools, Colleges & other educational Institutions, Medical Institutions, Market Associations, N.G.O.'s, RWAs, Rotary Club, Lion's Club, Farmers, Individuals etc.
Plantation Target (Trees/Shrubs/Herbs/Medicinal Plants)
1,05,000

The Earth does not belong to us: we belong to the Earth.

TIMELINE FOR PLANTATION TARGETS IN GCAP 2020-21

S.No.	Department/ Organization	No. of Saplings as per GCAP target	Number of Saplings			
			1st Quarter (April, May & June)	2nd Quarter (July, Aug & Sept)	3rd Quarter (Oct, Nov & Dec)	4th Quarter (Jan, Feb & March)
1.	Forest Department	(No.)	(No.)	(No.)	(No.)	(No.)
	Saplings' Planting	70,000	Pit Digging	70,000		
	Stem-cutting	3,20,000				3,20,000
	Patch-sowing/ Seed sowing	3,00,000	Pit Digging	300000		
	Free Distribution of saplings	65,000	Throughout the year			
2.	Municipal Corpn.					
	Saplings' Planting	50,000	8000	28,000	7000	7000
	Saplings' Selling	15,000	4000	8000	1500	1500
3.	Horticulture Divn. Engineering Department					
	Saplings' Planting	30,000	—	20,000	5000	5000
	Distribution/ Selling of saplings	25,000	3000	10,000	7000	5000



If you can't clean your surrounding then don't make it dirty.



Path to Peace goes through Greens

One tree makes 1 million matchsticks, but one match-stick can burn 1 million trees.



Chapter 6

STRATEGY TO IMPROVE THE FOREST AND GREEN COVER

Green space and adequate area under tree cover is essential to maintain environment of the cities and towns. Urban areas do not have only local environmental impacts but also large ecological footprints. Although tree plantation has been done on a large scale in the urban areas but a need based model dovetailing environmental considerations, will have to be adopted by all Greening Agencies in their plantation drives. The selection and quality of species play most important role in the success of greening and improving the survival percentage of the plantations. Therefore, the selection of species has to be judicious for which a number of indicators have been short-listed as follows:

- 💡 Location of plantation site;
- 💡 Site conditions like, soil, ground water table;
- 💡 Climatic conditions like rainfall, temperature;
- 💡 Ornamental and aesthetic requirement;
- 💡 Environmental considerations like pollution abatement;
- 💡 Distance of the plantation site from residential buildings & public utility services.

To ensure greater survival percentage of saplings planted, salient requirements have been identified which are as follows:

- 💡 Proper Site Selection;
- 💡 Selection/choice of species;
- 💡 Raising healthy seedling in the Nursery;
- 💡 Planting healthy and tall saplings;
- 💡 Protection from grazing etc.;
- 💡 Post Plantation care particularly for maintenance and water up to 3 yrs old plantation;
- 💡 Monitoring and concurrent evaluation.

Wasting time is useless cleaning the environment is the best.

POTENTIAL AREAS AVAILABLE FOR GREENING DURING 2020-21

1. Enrichment Plantation in Sukhna Catchment:

- A. Plantation of Fruit bearing species such as Mango, Jamun, Amrood, Imli, Amla, Gular etc, in dedicated plantation plots in Sukhna Wildlife Sanctuary.
- B. Plantation of indigenous & palatable variety of trees & shrubs on gentle slopes & plain area of Wildlife sanctuary.
- C. Hill tops & slopes of Sukhna Wildlife Sanctuary will be enriched with green cover by patch sowing of seeds by contour trenching & trench-cum-ridge method.
- D. Plantation of stem cuttings of soil conserving species like *Arundo-donax* (a soil binder plant) along choe (rivulets) banks to reduce erosion of choe banks by run off water during monsoons.



2. Enrichment plantation in city's forest area

The Reserved and Unclassed Forests in & around the city are:

- A. Lake Reserved Forest
- B. Sukhna Choe Reserved Forest
- C. Patiala-ki-Rao Reserved Forest
- D. Unclassed forests in Sukhna Choe, Lake & Patiala-ki-Rao

As per the India State of Forests Report-2019, density of forests ranges from dense to moderately dense. However, at places, there are open patches also which account for 6.43 sq km. Wildlife is found in abundance in these forests. Plantation of fruit bearing species in dedicated plots will be carried out within the city and the forest areas so that the wildlife may have sufficient food within the forest and the chances of man-animal conflict is reduced in due course. This will also add to improve the quality and the bio-diversity of the forests area.



3. Plantation within the city other than forest area

- A. Plantation of trees and shrubs in parks and green belts under the jurisdiction of Municipal Corporation and Engineering Department.
- B. Gap filling by planting along the roads, green belts etc. by Municipal Corporation and Engineering Department.
- C. Enrichment plantation in southern sectors.

4. Plantation in Schools, Colleges, Offices and residential houses and other vacant spaces

The Plantation area is limited in Chandigarh. Therefore, apart from the above-mentioned areas, plantations on private lands, Schools, Colleges, University, Hospitals, Police Lines, Residential Complexes and offices will be undertaken in collaboration with students, RWAs, Market Associations, Environmental NGOs etc.



Chapter 7 STRATEGIES FOR IMPLEMENTING THE GREENING ACTION PLAN 2020-21

MOTIVATING PEOPLE TO PLANT TREES

The main objective of this exercise is to motivate people to plant trees, to increase awareness among the citizens particularly the students about the importance of trees by inculcating tree consciousness among the citizens, to create a sense of responsibility among people to nurture and look after the trees and to motivate communities and colonies together to actively participate in combating pollution at local level.

No afforestation activity can be successful without people's participation. To nurture the trees and to motivate people & communities to actively participate in combating pollution at local level, awareness among citizens and students will be created through print & electronic media, posters, banners & by organizing various debates, quiz competitions and seminars on nature themes.

PARTNERSHIP INITIATIVE PROGRAMME

Partnership Initiative Programme (PIP) was launched with the motive to generate awareness about the activities to be undertaken by the departments and to seek participation of the public. Under PIP, 102 NGOs have been registered with the Forest Department, Chandigarh for the tree plantation drive. These NGOs co-ordinate with Forest Department for spreading awareness among various stakeholders, carry out Plantations & act as extended hands of Forest Department, Chandigarh.

We are living on this planet as if we have another one to go to.

STRATEGIES TO BE ADOPTED BY NGOs AND VOLUNTARY BODIES

NGO's, Environmental Groups, Rotary Clubs, Lions Club, N.S.S., will have following roles to play:

1. To co-ordinate with RWAs and Market Associations for plantation.
2. To co-ordinate with the Eco-Clubs in Schools & Colleges for massive plantation.
3. To train people, particularly children to plant trees properly.
4. To identify such associations and schools which will be participating in the programme and identify a nodal person in each association to work with.
5. To assess the number of seedlings and the species required.
6. The NGO's will be advised to identify and adopt old/ heritage trees growing in and around Chandigarh. For this, they can take help of financial institutions/ cooperative sectors.

STRATEGIES TO BE ADOPTED BY RWAs

Resident Welfare Associations will act as basic co-coordinating unit in the programme. Their work will include:

1. Informing the residents about the tree plantation drive.
2. Collecting saplings (free of cost) from Forest Nurseries.
3. Gathering volunteers for planting.
4. Identifying the places for planting.
5. Coordinating with the NGO's and Govt. Agencies and chalking out programme for plantations in their respective colonies
6. Ensuring proper protection and regular watering of plants.





जहाँ है हरियाली ।
वहाँ है खुशहाली ॥



Government of India
Ministry of Environment and Forests

NATIONAL GREEN CORPS

Initiated in 2001, National Green Corps, has achieved significant success. Eco-Clubs under the programme of National Green Corps are playing an important role for the protection and conservation of environment. MOEF had initially aimed at establishing 50,000 eco-clubs in this nationwide programme. The phenomenal response that the NGC has received has made the network grow to more than one lakh eco-clubs involving 6 million students across the country in 10 years, making it one of the largest conservation networks. The unique partnership between the MOEF, the State Government agencies along with dedicated NGOs working in the field of environmental education have contributed a lot to the success of this programme.

ROLE OF ECO-CLUBS

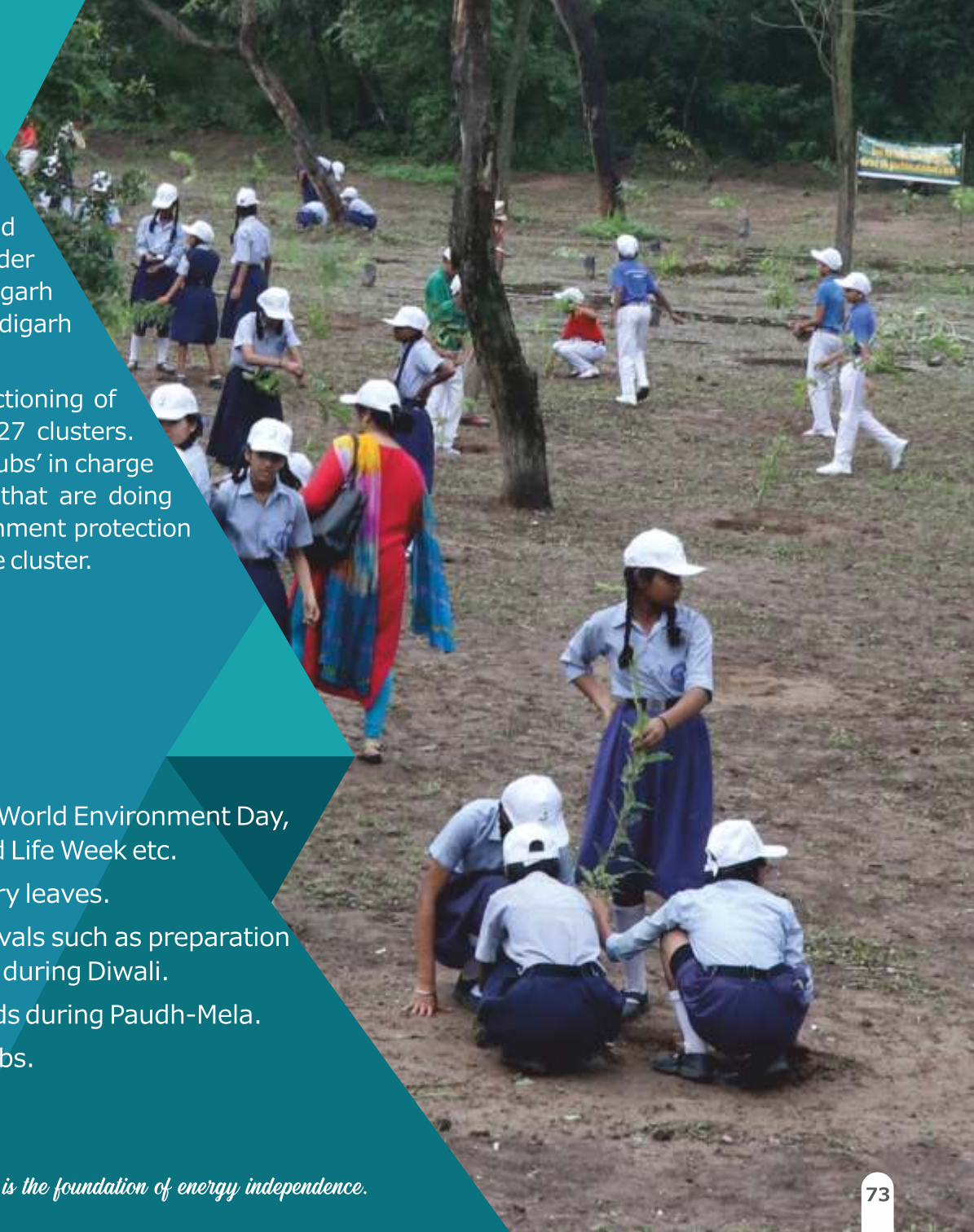
Under NGC Scheme, 152 Eco-Clubs in schools and 14 Environmental Societies in various colleges of Chandigarh have been registered in 2019-20. More than 75% of schools and 100% colleges of UT are registered under the NGC scheme. These Eco-Clubs are working under dynamic guidance of Department of Environment, Chandigarh in Collaboration with Department of Education, Chandigarh Administration.

For proper dissemination of knowledge and smooth functioning of Eco-Clubs, the department has divided Eco-Clubs into 27 clusters. Each Cluster is a group of ≥ 5 schools & one of the Eco Clubs' in charge is the cluster head. The eco club in charge of schools that are doing extraordinary and outstanding work in the field of environment protection and awareness, are appointed as the head of the respective cluster.

ACTIVITIES OF ECO-CLUBS

1. Tree plantation and to ensure their survival.
2. Establishment of herbal garden.
3. Establishment of herbal nurseries.
4. Celebration of various environmental days such as World Environment Day, World Earth Day, World Water Day, Ozone Day, Wild Life Week etc.
5. Preparation of vermi-compost and compost from dry leaves.
6. Environment awareness campaign on various festivals such as preparation of herbal colours on Holi and mass awareness drive during Diwali.
7. Exhibition and distribution of herbal plants and seeds during Paudh-Mela.
8. Installation of green and blue bins in school Eco-clubs.
9. Participation in Van Mahotsav.
10. Construction of water ponds.

Energy conservation is the foundation of energy independence.



ENVIRONMENTAL DAYS ANNUAL ACTIVITY CALENDAR

				2nd Feb. World Wetland Day	1-14th Feb. Oil Conservation Fortnight
28th Feb. National Science Day	14th Mar. International Day of Action for Rivers	21st Mar. World Forestry Day	22nd Mar. World Day For Water	23rd Mar. World Meteorological Day	7th Apr. World Health Day
18th Apr. World Heritage Day	22nd Apr. Earth Day	25th Apr. Arbor Day	29th Apr. Day of Remembrance For All Victims of Chemical Warfare	30th Apr. Water Resources Day	22nd May International Biological Diversity Day
5th Jun. World Environment Day	17th Jun. World Day to Combat Desertification	1-7th Jul. Van Mahotsav Week	11th Jul. World Population Day	15th Sep. Engineers Day	16th Sep. International Ozone Day
25th Sep. World Rivers Day	28th Sep. Green Consumer Day	2-8th Oct. Wildlife Week	5th Oct. World Habitat Day	16th Oct. World Food Day	25th Nov. Conservation Day
2nd Dec. Pollution Prevention Day	5th Dec. World Soil Day	11th Dec. International Mountain Day	13th Dec. Energy Conservation Day	14th Dec. National Energy Conservation Day	Oct. - Nov. Green Diwali Awareness campaign

STRATEGIES TO BE ADOPTED BY FOREST DEPARTMENT

Forest Department will co-ordinate at various levels. It will distribute the saplings free of cost from its six Nurseries to the Educational institutions, NGO's, RWAs and individual residents of the city. The Department will give technical know-how about planting trees and its post planting care, choice of species etc. It will also look after the plantation being created and already created earlier in forest area of Union Territory of Chandigarh. Special van to be deployed for free distribution of saplings at the doorstep of people.



STRATEGIES TO BE ADOPTED BY MUNICIPAL CORPORATION

Municipal Corporation is having large numbers of parks and green belts under its jurisdiction. Due to financial and manpower constraints, it is not feasible for Municipal Corporation, Chandigarh to develop all these parks and green belts in one go. Therefore, Municipal Corporation may require the help of RWAs in association with the local Councilor, other departments and Corporate Sector to develop and maintain these parks, green belts and roundabouts and to adopt them on certain kind of Memorandum of Understanding. Municipal Corporation is also selling ornamental, flowering and fruit plants at nominal price. Municipal Corporation will also extend technical knowhow to the visiting individual/organizations. Executive Engineer (Hort.), Municipal Corporation will be the Nodal Officer for co-ordination of plantation drive to be undertaken by RWAs. Municipal Corporation will also allow, wherever feasible, the citizens to put a small name plate near the sapling planted by them. It will give a sense of belonging that will affect post planting care. The local area Councilor, being the public representative, will be the Prime Mover in this campaign.



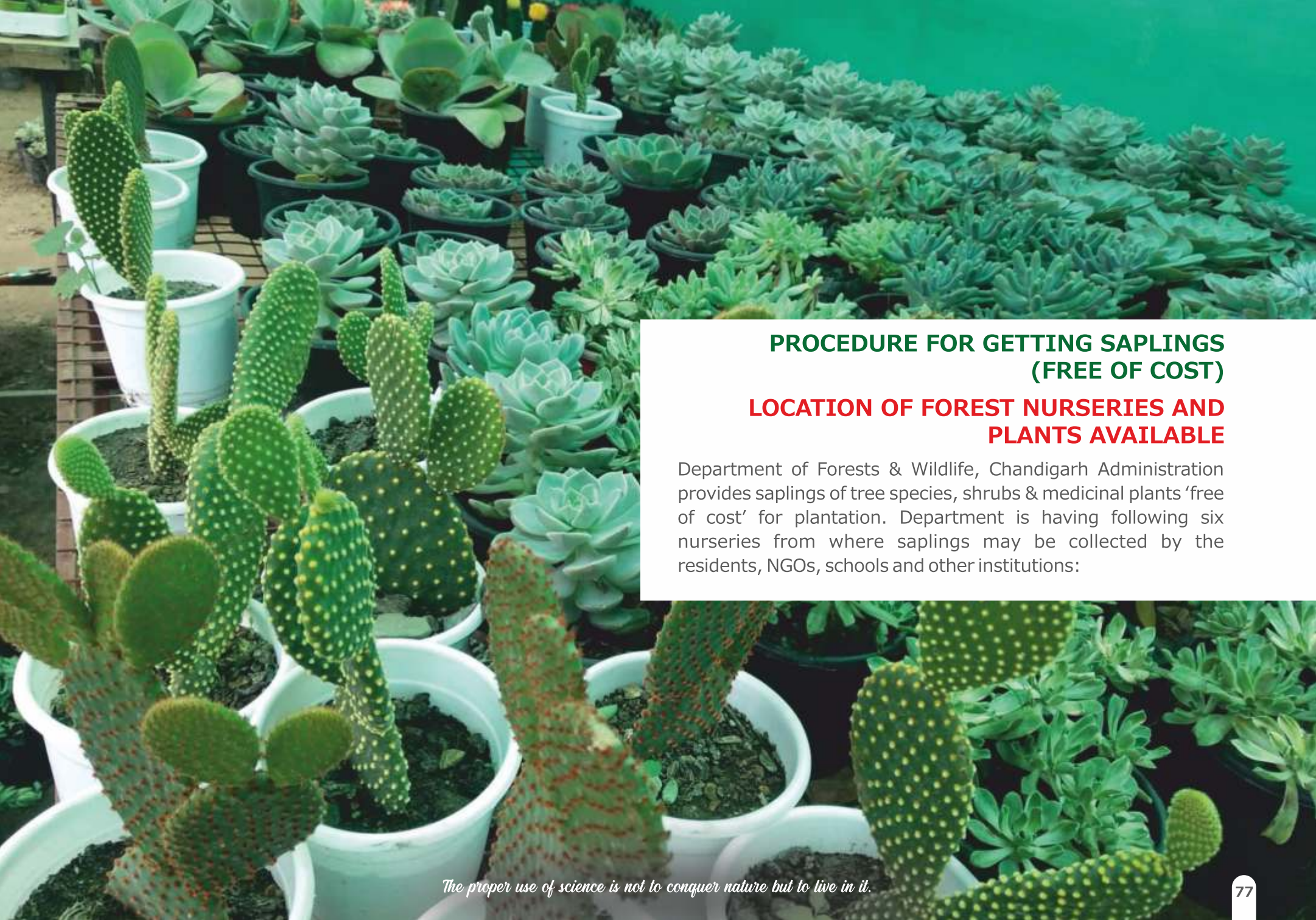
STRATEGIES TO BE ADOPTED BY HORTICULTURE DIVISION OF ENGINEERING DEPARTMENT

Horticulture Division shall guide all Government Schools and institutions to plant right kind of sapling depending upon the availability of the space and conditions of the site. The Department will be in constant touch with the Institutions. The Department is selling horticultural plants at subsidized rates from its nursery. The department is to plant Avenue Trees along roadside as per the availability of the site & specific tree species.

STRATEGIES TO BE ADOPTED BY CHANDIGARH HOUSING BOARD

The Housing Board shall motivate the residents of its housing colonies to plant & protect maximum number of trees in & around the colonies. The Housing Board needs to plant trees in newly completed slum Rehabilitation Project.





PROCEDURE FOR GETTING SAPPLINGS (FREE OF COST)

LOCATION OF FOREST NURSERIES AND PLANTS AVAILABLE

Department of Forests & Wildlife, Chandigarh Administration provides saplings of tree species, shrubs & medicinal plants 'free of cost' for plantation. Department is having following six nurseries from where saplings may be collected by the residents, NGOs, schools and other institutions:

**CONTACT NUMBER OF
THE IN CHARGES OF THE FOREST DEPARTMENT NURSERIES**

Sr. No.	Name of Nursery	Name of Incharge	Contact No.
1.	Hallomajra Nursery on Ambala – Chandigarh National Highway	Sh. Ajay Sharma, Forester	97817-11501
2.	Daria Forest Nursery, opposite Railway Station	Sh. Ajay Sharma, Forester	97817-11501
3.	Kishangarh Nursery at Kishangarh village, opposite Chandigarh Golf Range	Sh. Ajay Sharma, Forester	97817-11501
4.	Forest Nursery in Patiala-ki-Rao Forests (behind Panjab University)	Sh. Kulbir Singh Gill, Forest Guard	99151-27299
5.	Forest Nursery near Lake Club	Sh. Rohit Kumar, Forester	98889-99800
6.	Medicinal Plants Nursery at Chandigarh Botanic Garden, Sarangpur	Sh. Jatinder Singh, Forester	92164-28398

**TO OBTAIN THE SAPLINGS FROM THE
FOREST DEPARTMENT NURSERIES, APPLICATION ON PLAIN
PAPER MAY BE SUBMITTED TO THE FOLLOWING:**

Sr. No.	No. of Plants	Officer/Official to be approached
1.	Up to 10 Nos.	In charge of Forest Nursery
2.	Up to 50 Nos.	Range Forest Officer
3.	More than 50 Nos.	Deputy Conservator of Forests



- FOREST NURSERIES IN CHANDIGARH**
1. Halomajra Nursery on Ambala - Chandigarh National Highway
 2. Daria Forest Nursery, opp. Railway Station, Chandigarh
 3. Kishangarh Nursery, Vill. Kishangarh, Opposite Chandigarh Golf Range
 4. Forest Nursery, near Lake Club
 5. Forest Nursery in Patiala-ki-Rao Forests, behind Panjab University.
 6. Medicinal Plants' Nursery, Chandigarh Botanical Garden, Sarangpur

Note: People needing more than 50 nos. of saplings need to justify the same in their application. The land available needs to be verified by the Department before permitting.

Medicinal Plants of Chandigarh



Department of Forests & Wildlife, UT , Chandigarh

COMMON MEDICINAL PLANTS & THEIR USES



AMLA (T) AFTER 4TH YEAR

BOTANICAL NAME & FAMILY

Emblica officinalis
F: Euphorbiaceae

PART USED

Fruit

MEDICINAL USAGES

Cough, Diabetes, Cold, Laxative, Hyperacidity

ANTAMUL

BOTANICAL NAME & FAMILY

Tylophora indica
F: Asclepiadaceae

PART USED

Leaf, Root

MEDICINAL USAGES

Bronchitis
Cold & Cough



ARJUNA

BOTANICAL NAME & FAMILY

Terminalia arjuna
F: Combretaceae

PART USED

Bark, Leaf, Flower

MEDICINAL USAGES

Tonic, Astringent, Febrifuge, Hypertension, Cardiac disease



ASHOK (T) 10 YEAR ONWARDS

BOTANICAL NAME & FAMILY

Saraca asoca
F: Caesalpinaceae

PART USED

Bark Flower

MEDICINAL USAGES

Menstrual Pain, Uterine disorder, Diabetes



ASWAGANDHA (H) 1 YEAR

BOTANICAL NAME & FAMILY

Withania Somnifera
F: Solanaceae

PART USED

Root, Leaf

MEDICINAL USAGES

Restorative Tonic, Stress, Nervous Disorder, Aphrodisiac





BAEL (T) AFTER 4-5 YEARS

BOTANICAL NAME & FAMILY

Aegle Marmelos
F: Rutaceae

PART USED

Fruit, Bark

MEDICINAL USAGES

Diarrhoea, Dysentery
Constipation



BAHEDA (T)

BOTANICAL NAME & FAMILY

Terminalia Belerica
F: Combretaceae

PART USED

Bark, Fruit

MEDICINAL USAGES

Cough, Insomnia
Dropsy, Vomitting, Ulcer

BARNA

BOTANICAL NAME & FAMILY

Crateva adansonil
F: Combretaceae

PART USED

Leaf, Root

MEDICINAL USAGES

Anti-periodic
Tonic & Demulcent



BHRINGRAJ (H)

BOTANICAL NAME & FAMILY

Eclipta Alba
F: Compositae

PART USED

Seed, Whole

MEDICINAL USAGES

Anti-inflammatory
Digestive, Hair tonic



BHUMI AMLA WITH IN 1 YEAR

BOTANICAL NAME & FAMILY

Phyllanthus niruri
F: Euphorbiaceae

PART USED

Bark Flower

MEDICINAL USAGES

Anemia, Jaundice
Dropsy



BRAHMI (H) 1 YEAR

BOTANICAL NAME & FAMILY

Bacopa monnieri
F: Schulariaceae

PART USED

Whole Plant

MEDICINAL USAGES

Nervous, Memory Enhancer,
Mental disorder

Plans to protect air and water and wildlife are in fact plans to protect man.



DHAK

BOTANICAL NAME & FAMILY

Butea Monosperma
F: *Papilionaceae*

PART USED

Flower, Bark

MEDICINAL USAGES

Piles, Tumors &
Menstrual disorders



GHRIT KUMARI (H) 2-5 YEAR

BOTANICAL NAME & FAMILY

Aloe vera
F: *liliaceae*

PART USED

Leaves

MEDICINAL USAGES

Laxative, Wound healing,
Skin burns & Ulcer

GULUCHI (C) WITH 1 YEAR

BOTANICAL NAME & FAMILY

Tinospora Cordifolia
F: *Menispermaceae*

PART USED

Stem

MEDICINAL USAGES

Gout, Piles, General debility
fever, Jaundice



KALMEGH (H) WITH IN 1 YERA

BOTANICAL NAME & FAMILY

Andrographis paniculata
F: *Scanthaceae*

PART USED

Whole Plant

MEDICINAL USAGES

Fever, weakness,
Realease of gas



PIPPALI (C) AFTER 2-3 YEARS

BOTANICAL NAME & FAMILY

Piper longum
FL *Piperaceae*

PART USED

Fruit, Root

MEDICINAL USAGES

Appetizer, Enlarged Spleen,
Bronchitis, Cold, Antidote



MANDUKPARNI (H)

BOTANICAL NAME & FAMILY

Centella asiatica
F: *Mackinlayaceae*

PART USED

Whole Plant

MEDICINAL USAGES

Anti-inflammatory, Jaundice,
Diuretic, Diarrhoea



NEEM (T)

BOTANICAL NAME & FAMILY

Azardichata indica
F: *Meliaceae*

PART USED

Rhizome

MEDICINAL USAGES

Sedative, Analgesic, Epilepsy,
Hypertension



SADA BAHAR (H)

BOTANICAL NAME & FAMILY

Vinca rosea
F: *Apocyanae*

PART USED

Whole Plant

MEDICINAL USAGES

Leukemia, Antispasmodic,
Antidote

SARPA GANDHA (H) After 2 YR

BOTANICAL NAME & FAMILY

Rauvolfia serpentina
F: *Apocyanaceae*

PART USED

Root

MEDICINAL USAGES

Hypertension,
insomnia



STAVARI (C) AFTER 2-3 YR

BOTANICAL NAME & FAMILY

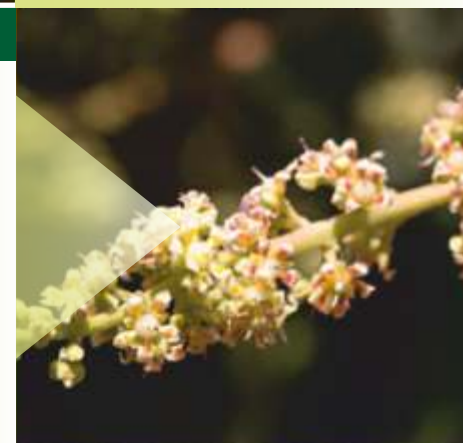
Asparagus racemosus
F: *Liliaceae*

PART USED

Tuber , Root

MEDICINAL USAGES

Enhance lactation, general
weakness, fatigue, cough



STEVIA

BOTANICAL NAME & FAMILY

Stevia rebaudiana
F: *Asteraceae*

PART USED

Leaf

MEDICINAL USAGES

Sugar
Substitute



TULSI (perennial) / 3 MONTHS

BOTANICAL NAME & FAMILY

Ocimum sanctum
F: *Lamiaceae*

PART USED

Leaves, Seeds

MEDICINAL USAGES

Cough, Cold, Bronchitis,
Expectorant



Chapter 8 USEFUL TIPS FOR PUBLIC

PLANTATION TIPS

BY SEED

- The seed should be sown shortly before its germination so that it is exposed to the risk of being eaten away by birds & rodents for minimum duration of time.
- Seed should be sown so deep so as to have a covering of not more than its minimum Diameter. Minute seeds require special care. They should be slightly covered with fine sand.

BY PLANTING SAPPLINGS

- Distance between two seedlings should be at least 4 meters. Care should also be taken to ensure that the seedlings planted are away from the building so that they do not disrupt the sunlight falling on the building. The minimum distance of the plant from any building should be kept at about 8 to 10 meters and from boundary wall, it should be about 2.5 to 3 meters.
- Place the seedling as upright as possible.
- Remove any organic matter, like leaves or twigs, from the hole.
- Don't plant seedlings near water holes, stumps or rocks.



FOR BARE ROOT SEEDLINGS:

- Never leave roots exposed to the air, as they can dry out and die within minutes.
- You need to dig a deep enough pit to accommodate the roots, spread out well and oriented straight up and down (not all bunched up).
- The swelling that marks the transition between stem and roots (root collar) should be at ground level.

FOR POTTED OR BURLAP WRAPPED SEEDLINGS

- Be sure to remove all packaging material from around the roots even if it appears to be biodegradable.
- Ensure that the seedling is planted at the same depth as it was in the pot.
- A shallow 1 to 2 cm dish shaped impression can be left around the planted seedling to contain mulch and provide water catchment.
- Never bury the branches & do not trim roots. Seedlings need every single tiny root. Pack the soil well, but don't over pack it. Press gently but firmly to prevent shocking the roots. Air pockets can kill roots.



HOME GARDENING TIPS

Beware of Leaf-eating caterpillar. It is 'Chaffer beetle' that attacks in summer and leaves back leaf skeleton eating all the green.

Standing water in pot indicates it needs repotting. Never try to mend the fault by disturbing the potholes. It will never work.

Never use axe or *gandaasa* to prune trees. Irregular cuts invite invasion of tree borers that weaken it from within, leading to branch snapping. Use only pruning saw or secateurs for pruning.

Do not plant peach, plum, pear, grapes, mulberry, etc. in summer/rainy season. Such deciduous plants are planted only once in a year in winters.

In roses, every bud below a flowering bud is a potential flowering bud. Unless you remove the fading or faded flowers, you will not get more flowers. The energy of plant is diverted towards seed formation.



Always apply disinfectant at the fresh cut ends of plants. A little water with mixed in Blitox powder makes good slurry for this purpose.

Remove unwanted growth emerging from below the graft union in plants.

The basin below a tree should be as wide as the tree spread.

Ensure proper drainage especially after rain. Standing water could kill a 20-year old loquat in a day. Papaya is also very sensitive.

For planting, make a pit of three feet diameter with similar depth. Mix with upper soil, an equal amount of sand and well rotten farmyard manure and refill the pit compacting the soil at the same time.

To check fruit splitting in litchi, give plenty of water, at least twice in a week. In case of lemon, keep the frequency to an interval of three days. The splitting takes place due to irregular watering.



Tomato fruit gets spoiled when it comes in contact with water and so does the plant. Grow tomato at the edge of channels and let the vine spread on dry between two channels. Give water and fertilizer only in the channel. You will prolong the life of plant that will give more of good quality fruit.

Keep a watch for insects/ diseases on the trees outside your home garden. You will save your own trees besides helping the administration to keep the city green. Inform about any of such maladies to the concerned department or the administration or the corporation.

A WORD OF CAUTION

Those who scrap the bark of trees like Jamun and Arjun from the roadside for eating are not only alarming themselves by consuming poison but also killing these trees with no consideration for generation to come. Such plants at the roadside are fully exposed to pollutants and have tons of deposits of lead etc. So, what you consume is nothing but deadly poison.



Butterfly Park has
more than 100 species
of butterflies



BUTTERFLY PARK, SECTOR-26, CHANDIGARH



CHANDIGARH
IS MORE
BEAUTIFUL
THAN YOU THINK



COME TO THE
FOREST

TO LOOSE YOUR MIND
AND
TO FIND YOUR SOUL.

DEPARTMENT OF FORESTS & WILDLIFE, CHANDIGARH ADMINISTRATION

2nd floor, Paryavaran Bhawan, Sector 19-B, Madhya Marg, Chandigarh - 160 019

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